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COST-BASED PRICING IN THE NHS INTERNAL MARKET: ACCOUNTING CHOICES AND THE ACHIEVEMENT OF ECONOMIC EFFICIENCY

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THESIS SUMMARY

Since 1988, quasi-markets have been introduced into many areas of social policy in the UK, the NHS internal market is one example. Markets operate by price signals. The NHS Internal Market, if it is to operate efficiently, requires purchasers and providers to respond to price signals. The research hypothesis is - *cost accounting methods can be developed to enable healthcare contracts to be priced on a cost-basis in a manner which will facilitate the achievement of economic efficiency in the NHS internal market.* Surveys of hospitals in 1991 and 1994 established the cost methods adopted in deriving the prices for healthcare contracts in the first year of the market and three years on. An in-depth view of the costing for pricing process was gained through case studies.

Hospitals had inadequate cost information on which to price healthcare contracts at the inception of the internal market: prices did not reflect the relative performance of healthcare providers sufficiently closely to enable the market's espoused efficiency aims to be achieved. Price variations were often due to differing costing approaches rather than efficiency. Furthermore, price comparisons were often meaningless because of inadequate definition of the services (products). In April 1993, the NHS Executive issued guidance on costing for contracting to all NHS providers in an attempt to improve the validity of price comparisons between alternative providers. The case studies and the 1994 survey show that although price comparison has improved, considerable problems remain. Consistency is not assured, and the problem of adequate product definition is still to be solved. Moreover, the case studies clearly highlight the mismatch of rigid, full-cost pricing rules with both the financial management considerations at local level and the emerging internal market(s). Incentives exist to cost-shift, and healthcare prices can easily be manipulated. In the search for a new health policy paradigm to replace traditional bureaucratic provision, cost-based pricing cannot be used to *ensure* a more efficient allocation of healthcare resources.

KEY WORDS: Quasi-markets, NHS internal market, cost-based pricing, economic efficiency, healthcare cost accounting.

Dedication

To Graham and Alice - their value cannot be costed or priced.

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ABBREVIATIONS

ABC	Activity-Based Costing
ALOS	Average Length of Stay
AYMB	Arthur Young Management Budgeting
BMA	British Medical Association
BUPA	British United Provident Association
CASPE	Clinical Accountability Service Planning and Evaluation
CCU	Coronary Care Unit
CIPFA	Chartered Institute of Public Finance and Accountancy
DGH	District General Hospital
DoH	Department of Health
DHA	District Health Authority
DHSS	Department of Health and Social Security
DRG	Diagnosis Related Group
DMU	Directly Managed Unit
ECR	Extra- Contractual Referral
ENT	Ear, Nose and Throat
FCE	Finished Consultant Episode
FHSA	Family Health Service Authority (formerly FPC)
FPC	Family Practitioner Committee
FIP	Financial Information Project
FR	Financial Return
GPFH	General Practitioner Fund-holder
HFMA	Healthcare Financial Management Association
HISS	Hospital Information Support System
HRG	Healthcare Resource Group
NEMC	New England Medical Center
ICD	International Classification of Diseases
ITU	Intensive Therapy Unit
LRAC	Long Run Average Cost
LRMC	Long Run Marginal Cost
MARS	Medical Activity Resource System
NAHAT	National Association of Health Authorities and Trusts
NHSME	National Health Service Management Executive
NSGC	National Steering Group on Costing
PTS	Patient Treatment Services
RCC	Ratio of Costs to Charges
RHA	Regional Health Authority

RM	Resource Management
RVU	Relative Value Unit
SAPPS	Specialty and Procedure Pricing System
SCBU	Special Care Baby Unit
TFR	Trust Financial Return
WMRHA	West Midlands Regional Health Authority

GLOSSARY

Acute services
A range of health services, usually provided in a hospital setting, for people with diagnosed acute illness.

Block contract
A contract between a purchaser of health services and a provider of health services, which gives access to a defined range of services for an annual fee paid in instalments.

Capital charges
An amount equivalent to depreciation and six per cent interest on fixed assets, included in prices charged by directly managed hospitals, and payable by district health authorities to regional health authorities.

Case mix
Frequency of patients falling into types according to some predetermined characteristics. These may be social, demographic or severity measures, but are more normally diagnosis, age and treatment. The number of cases in each group can be used to calculate a case mix index.

Clinical Accountability, Service Planning and Evaluation
The CASPE Research Unit pioneered the involvement of clinicians (sometimes with nursing and other disciplines) in financial planning and budgeting projects, notably through the system of planning agreements with clinical teams (PACTs).

Clinical directorate
Sub-hospital organisation structure, based on a defined group of patient services, such as general surgery or pathology, that is devolved responsibility for its own activities. It is multi-disciplinary, and managed by a director who is usually a clinician.

Cost and volume contract
A contract between a purchaser and a provider under which payment is made for a set level of service, usually expressed as maximum number of cases, treatments or interventions. Once the agreed maximum is reached, additional payment is made on the basis of individual cases within an overall limit.

Coefficient of variation (CV)
The ratio of the standard deviation to the mean, used as a measure of dispersion. It is sometimes considered that a coefficient of variation should be less than 1 for a homogeneous distribution.

Day case surgery
An operation for which the patient is admitted and discharged on the same day.

Diagnosis related group (DRG)
Groupings of patients that are clinically and resource homogeneous as defined by developers of the scheme at Yale School of Management. Each case belongs to one and only one of some 500 groups. It can be assigned after inspecting the principal diagnosis, main operation, secondary diagnosis, age, sex and disposal from a patient computer abstract.

Elective surgery
Surgical treatment for patients which is planned/ booked i.e. not an emergency.

Finished consultant episode (FCE)
A period of care in which a patient is registered under a consultant, applied to in-patient and day cases.

Healthcare Resource Group (HRG)
Groupings of patients developed by the National Case Mix Office which are clinically similar (homogeneous) and can be expected to consume similar amounts of resource (iso-resource).

Medicare
The US publicly funded and administered health insurance scheme which covers people over 65 years old and the disabled, irrespective of income levels.

Medical audit
The NHS Reforms obliged al doctors to examine the quality of their care collectively with other members of their specialty, clinical group or practice. Managers must be informed of results and can initiate specific audits.

Resource Management (RM) database
The principal database management system implemented by RM hospitals. A centralised database designed to support planning, monitoring and evaluation of patient services.

Specialty Division
A grouping together of medical staff in related areas of work.

Chapter One **INTRODUCTION**

1.1 Background to the research project

Since 1988, a programme of market oriented change has been introduced into the UK welfare state. The traditional top-down planning model, characteristic of welfare services since the Second World War, had been conceptualised as a publicly accountable arrangement that could ensure provision of necessary social goods in a universal and cost effective manner (Saltman and Von Otter 1992). By the 1980s, the logic of neo-classical economics had begun to replace that of classical democratic politics as the core theoretical basis on which to evaluate all types of social activity. Nigel Lawson expressed a common view that 'market forces' were to be increasingly a feature of the public sector.

> "The rehabilitation of market forces in the early 1980s was seen at first as an aberration from the post war consensus, and one that was likely to be short-lived. But I have little doubt, that as a longer perspective develops, history will judge that intervention and planning were the aberration, and that the market economy is the normal, healthy way of life." Lawson (1989) p35.

The extent and speed of the introduction of 'market forces' into the welfare state was dramatic, the 'big bang' (Le Grand 1994). In 1988, the Education Reform Act was passed: opted-out and other schools were to compete for state-financed pupils. The Department of Education introduced a different funding system for universities and polytechnics which were in future to compete for students. In the same year, the Griffiths Report on personal social services (Griffiths 1988) was published: care managers at a local level were to become budget holders and purchase the best package of care for individual clients from a wider variety of competing agencies. 1988 also saw the setting up of a comprehensive review into the NHS, a review that culminated in the 1989 White Paper, Working for Patients (Department of Health 1989a). The health service reforms embodied in the 1990 NHS and Community Care Act and introduced on 1 April 1991, represent the greatest change in the organisation and management of the NHS since it was established in 1948. In essence, an internal market has been created within

the NHS in which district health authorities (DHAs) and general practice fundholders (GPFHs) have responsibility for commissioning or purchasing services; and directly managed units (DMUs) and NHS trusts have the responsibility for providing them.

All these developments thus involve the introduction of quasi-markets into the welfare state. They are 'markets' because they replace monolithic state providers with competitive independent ones. They are 'quasi' because they differ from conventional markets in a number of key ways (Le Grand 1994). In contrast to conventional markets, competitive providers (schools, universities, residential homes, hospitals) are not necessarily out to maximise their profits nor are they necessarily privately owned. On the demand side, purchasers are often not the consumers of services and receive their funding from the public purse according to some prescribed formulae.

The pressure for the reforms in the welfare state came from a number of sources. Firstly, there was a clash between the demands for new resources for public sector services and the desire to reduce spending. The overwhelming policy objective in the 1980s was the containment of public expenditure (Flynn 1990). Planning models could no longer be justified solely on their ability to provide universal services and to enhance social justice (Saltman and Von Otter 1992); economist's assumptions about productivity became the pre-eminent criteria for judging the appropriateness of welfare provision such as clinical and preventive services.

Secondly, impetus came from the desire to make the welfare system more responsive to the 'consumer'. Traditional planning systems offered little choice to the recipient of welfare services and service provision did not respond adequately to their needs and wants. In economist's terms, they were both technically inefficient and allocatively inefficient. The welfare system was particularly unresponsive to the poor and disadvantaged, resources and facilities were often diverted to those best able to manipulate the system, that is, the educated and articulate middle class (Le Grand 1982; Goodin and Le Grand 1987; Bramley, Le Grand and Low 1989). The consequent pattern of distribution could therefore also be argued to be inequitable.

A further factor argued to have triggered the market reforms is the actions of public sector employees and unions (Saltman and Von Otter 1992) who exerted pressure for more resources. Llewellyn (1993), saw the erosion of the power of the clinicians as particularly important in the NHS reforms.

The introduction of quasi-markets may help to solve some of the problems of the traditional planning model - at least in theory.

> "The theory behind such a scheme is that managers would then be able to use resources most efficiently." Enthoven (1985) p40.

The introduction of competition is supposed to encourage a more economical use of resources, thus improving technical efficiency. More importantly, the introduction of competing suppliers could improve allocative efficiency. Welfare users, or at least their agents, should have alternative sources of supply. However, there is very little research concerning how markets for publicly funded services should operate to stimulate the desired efficiency gains. The thesis examines the role of cost accounting in pricing healthcare under the NHS internal market or "managed competition". The study is restricted to hospital provision of acute health services; long stay services for the elderly and the mentally ill are excluded.

1.2 The Structure of the Thesis

The following chapter examines markets and healthcare from an economic perspective. The nature of markets and their perceived operation is identified before depicting the NHS internal market. Alternative forms of governance structure and their relevance to healthcare are then briefly considered.

Chapter Three examines the incentives and scope for economic efficiency in the NHS internal market. The internal market model, it is argued, requires price signals which indicate the comparative efficiency of healthcare providers. Healthcare pricing theory and experience is considered in the light of the prescribed cost-based pricing regime set out for the NHS internal market. Accounting information for pricing decisions and appropriate cost 'products' are discussed before examining different methods of attributing hospital costs. The research hypothesis is then postulated:

Cost accounting methods can be developed to enable healthcare contracts to be priced on a cost-basis in a manner which will facilitate the achievement of economic efficiency in the NHS internal market.

Chapter Four refines the hypothesis: it is restricted to whether cost-based pricing can provide appropriate signals to facilitate a more efficient use of NHS financial resources. The hypothesis is broken down into two main research questions:

- can cost-based prices be reasonable reflections of resource consumption?
- can prices be meaningfully compared between providers?

The choices and issues in research design are discussed before establishing an appropriate research methodology. The research methods adopted, namely surveys in 1991 and 1994 and two case studies, are explained.

Chapter Five provides a review of cost accounting information in healthcare prior to the introduction of the NHS internal market. Information available nationally and under specific initiatives in the UK is set out, followed by consideration of how healthcare is costed in the USA where a market approach to healthcare has been adopted. Finally, the UK cost demonstration sites in 1990 for pricing in the internal market are outlined.

Chapters Six and Seven cover the two surveys of hospitals in the West Midlands Health Region. The initial survey, (Chapter Six), was undertaken in 1991 to show the cost methods adopted in deriving the prices for healthcare contracts in the first year of the market. In 1994, a further survey of hospitals in the West Midlands, (Chapter Seven), was undertaken to show how costing for contracting has developed following subsequent guidance from the NHS Management Executive (NHSME).

Chapter Eight sets out case studies of the costing for pricing process at two acute healthcare providers. The costing and pricing processes prior to and following the detailed NHSME guidance are examined. How these acute healthcare providers negotiated their 1994/95 healthcare contracts is examined in Chapter Nine. The case studies provide an in depth analysis of costing and pricing while including a wider perspective of the issues surrounding the contracting process.

Chapter Ten evaluates the hypothesis using the findings from the surveys and the case studies. Chapter Eleven reviews the research study, draws implications from the research findings and highlights areas for further study.

1.3 The issues addressed and conclusions reached

The thesis addresses whether cost-based pricing can be employed to facilitate economic efficiency in the NHS internal market. In the first year of the market, as shown by the 1991 West Midland's Survey, it was evident that cost-based prices were not feeding appropriate signals to purchasers. The prices were not based on accurate, reliable costs: poor methods of cost attribution were adopted. Contracts were largely placed at specialty level which provided an imprecise definition of services (products) - variations in case-mix within specialties were not addressed. On the other hand, where procedure prices were compiled (namely for GPFHs) they were often based on inadequate data and cost methods. Thus prices were not reliable indicators of resources consumed. Efficiency comparisons between providers were not possible: price differences may have been spurious due to inadequate methods and a lack of consistency in cost allocation and apportionment methods between different hospitals.

The 1994 West Midlands Survey, showed that cost methods have developed, and following detailed guidance from the NHSME, consistency has improved, but a lack of activity information remains. Price variations due to costing approaches rather than differing resource use still persist. The thorny problem of adequately defining the healthcare products for costing purposes remains to be resolved, (attempts are being made to use healthcare resource groups (HRGs) for this purpose).

The wider issues surrounding costing for healthcare contracting were examined through the case studies. The case studies of the costing process at two acute service providers enabled the factors influencing the cost methods to be examined. Conflict between the requirement for a uniform approach to costing and the financial management needs at local level was apparent. Even more illuminating were the pricing and contract negotiation

stages which superseded the costing process. Evidence of extensive cost-shifting and price manipulation was found. Published prices are a start point: the overall contract value is subject to negotiation, the providers inevitably have long term relationships with their purchasers. The emerging internal market is a set of oligopolies and oligopsonies in which inter-organisational bargaining is the central mechanism by which resources are allocated. Such an environment is incompatible with the simulation of the pricing regime of the perfectly competitive market. Financial management and market incentives encourage the manipulation of full-cost prices and, given the make-up of healthcare costs, this can be achieved relatively easily. In the search for a new policy paradigm to replace the traditional, top-down planning model, cost-based pricing within an internal market cannot be used to ensure a more efficient use of NHS resources. If the quasi-market is to be efficiency driven, either measures must be taken to refine, monitor and enforce cost-based pricing rules, or other ways of managing the market must be considered.

Chapter Two

MARKETS AND HEALTHCARE - AN ECONOMIC PERSPECTIVE

2.1 Introduction

This chapter identifies the nature of markets and their perceived operation before depicting the NHS internal market. Alternative forms of governance structure (hierarchies; networks and clans) are briefly considered and their relevance to the NHS discussed. The internal market model, it is argued, requires price signals which indicate the comparative efficiency of healthcare providers; the market should be efficiency driven, generating savings to outweigh additional transaction costs resulting from the move from a hierarchical governance structure.

2.2 Markets

A market is basically an adjustment mechanism for supply and demand which enables the exchange of goods and services between consumers and producers. The perceived operation of markets varies according to whether the neo-classical or neo-Austrian school of economic theory is followed and also the market conditions underlying the analysis.

Neoclassical

The dominant idea of neo-classical economics is of a series of separate firms maximising their profits via adapting their outputs to the given ruling price. At the given market price, producers offer their products for sale and consumers spend their disposable income according to their desires. In a perfectly competitive market no producers or consumers are left unsatisfied by the resultant exchange and distribution; at the given market price producers are able to sell all that they want (so maximising their profits) and consumers are able to purchase all they wish (so maximising their utility). Prices act as the crucial equilibrating mechanism. Decision makers, already in possession of the required information about market conditions and the ruling price, adjust their behaviour to reach a 'static' equilibrium position where no one can be made better off without at least one person being made worse off (a Pareto equilibrium position).

Neo Austrian

In the Neo-Austrian or 'competitive process' approach, the market is seen as a process of selection, turmoil and change where disequilibrium conditions prevail. This is an overtly dynamic theory of the market. Less emphasis is put on price and more on the (beneficial) effects of the competitive process that the market engenders.

In the Austrian approach, competition and entrepreneurship are regarded as important aspects of the market process which are largely ignored in neoclassical economics. The market is still seen as made up of the activities of consumers, producers and factor owners; and activities result from decisions to produce, to buy and to sell commodities, but it is not the equilibrium that is the focus of attention. Not all decisions in a given period can be carried out, since many of them may erroneously anticipate and depend on decisions which are in fact not being made. Many decisions which are carried out may not turn out to be the best possible course of action. The market process is set in motion by the results of initial market ignorance of the participants. The process itself consists of systematic planned changes generated by the flow of market information released by market participation. Krizner explains how the market process continually tests competitors:

> "Each inches ahead by offering opportunities a little more attractive than theirs. His competitors, in turn, once they become aware of what they are competing against, are forced to sweeten still further the opportunities they make available to the market; and so on. In this struggle to keep ahead of one's competitors (but at the same time to avoid creating opportunities more attractive than necessary), market participants are thus forced by the competitive market process to gravitate closer and closer to the limits of their ability to participate gainfully in the market." Krizner (1993) p57.

Competition between consumers for each commodity may tend to force its price upwards; competition among owners of a particular resource may tend to force its price downwards. As Hayek (1984) points out, to the entrepreneur, prices are the key:

> "It is only through prices he finds in the market that he can learn what to do and how. [It is only prices that inform him] constantly and unmistakeably.....what goods and services he ought to produce in his own interest as well as the general interest" Hayek (1984) p28 quoted in Green (1987) p143.

Unlike neo-classical economics, the efficiency of the price system in this approach does not depend on the optimality (or absence of it) of the resource allocation pattern at equilibrium; rather it depends on the degree of success with which market forces can be relied on to generate spontaneous corrections in the allocation patterns prevailing at disequilibrium.

Market conditions

- *Perfect competition*

Under perfect competition there are a large number of buyers and sellers, none of whom is large enough relative to the market overall to have any direct control over the market price. The market price is set by the interaction of decisions these market agents make in the light of the prevailing price but over which they individually have no direct control. The price is set by the market system, a kind of social auctioneer or 'unseen hand'.

- *Monopoly*

Under monopoly the single monopolist sets the market price, thus the monopoly is the market. Decisions internal to the organisational unit determine price, and goods and services have a price attached to them when they enter the market.

- *Monopolistic or oligopolistic competition*

Under monoplistic or oligopolistic competition, a number of competitive enterprises are large enough to have at least some control over the market price, though not total control. Under these conditions, competitors have the option of either setting their prices and taking the output that is demanded by consumers in the light of that decision, or of setting their output targets and letting the price fluctuate accordingly, or some combination of these two options.

The economist's model of pricing is set out in Appendix A.

Thus markets operate quite differently according to the conditions underlying the analysis; furthermore different schools of thought perceive them to operate in deviating ways. For example, monopoly, for the neo-classical school, is a highly undesirable state of affairs that undermines all the advantages of the competitive market. It can lead to exploitation of the monopolist's power in the market so that prices are fixed above their economically efficient level and excess profits are earned by the monopolist. Monopolists therefore need to be closely monitored by the public authorities and dismantled by government action as and when they abuse their dominant market position. However, for the neo-Austrian school, monopoly may simply be the result of past successful entrepreneurial initiative and dynamic competitive activity. Firms need to be allowed to capture monopoly rents that research and development investment and advertising capital produce if society is to reap the full benefits that dynamic competition fosters. They argue that the 'social costs' of monopoly profits and disequilibrium prices may be exaggerated and anyway these will be transitory and short run as they are bid away by the long term operation of the market process's 'creative destruction' - as long as the market process is given free reign monopolists will not last. The long term benefits of new products, processes and information will undermine existing monopolies and outweigh any static partial equilibrium calculation of their cost to society.

A further divergence is the profit maximisation objective. Profit maximisation is seen as how a firm survives and prospers in neo-classical economics. On the other hand, in the competitive process approach, the problem for the firm is to continue and prosper in the face of continual threat of new entrants to the market. Price provides the basis for the income of the firm, which relative to its costs, determines the firm's profits and investment strategies.

Within both schools, consumer sovereignty holds the supreme advantage that it allows consumers to chose independently how they will deploy their spending power and in turn this will lead to the correct allocation of resources to meet those consumer needs. Prices produce a signalling device that contributes spontaneously and voluntarily to an efficient and prosperous co-existence of all elements in the social process.

2.3 Contestable markets

A contestable market is one in which the positions of incumbents are easily contested by entrants.

> "A perfectly contestable market is defined to be one into which entry is completely free, from which exit is costless, in which entrants and incumbents compete on completely symmetric terms, and entry is not impeded by retaliatory price alterations" Baumol, Panzer and Willig (1988) p349.

Under these circumstances, Baumol et al argue that, in theory, a perfectly contestable market offers many of the benefits hereto associated only with perfect competition. They see monopolists and oligopolists who populate such markets as "sheep in wolves' clothing", because in perfectly contestable markets rivals can be as effective as actual competitors in forcing efficient behaviour. Entrepreneurs are assumed to be profit seekers who take advantage of all profitable opportunities for entry. Potential entrants assess the profitability of their marketing plans by making use of the current prices of incumbent firms. An entrepreneur will enter a market if he expects to earn a positive profit by undercutting the incumbent's price and serving the entire market demand at the new lower price. Potential entrants are undeterred by prospects of retaliatory price cuts by incumbents and, instead, are deterred only when current market prices leave them no room for profitable entry. Retaliation may not be feared, firstly, because entry and exit are so inexpensive that a profit opportunity will attract new competitors; secondly, because incumbents are restrained by law or other impediments from undertaking retaliatory moves; or, thirdly, because some potential entrants believe that entry will not lead to price responses by incumbents (this may be rational, for example, if entrants are small relative to the size of the market.) A contestable market may contain only a single monopoly enterprise whose as-yet unidentified competitors are nevertheless "in the wings awaiting their entry cue".

Baumol et al argue that in a contestable market, firms must operate efficiently in order to survive. If a firm were to earn profits while producing at costs greater than necessary, an entrant could undercut the firm's prices and earn a

positive profit by operating more efficiently. Similarly, an incumbent firm is forced to adopt any new techniques capable of reducing costs, for failure to do so will invite entry by firms that do employ cost-saving innovations. Cross-subsidies cannot be sustained: if any set of products of the incumbent firms does not yield incremental net revenues as great as its incremental net costs, then an entrant can cut prices and nevertheless earn more than the incumbent previously did (e.g. by offering only the remunerative products). Moreover, total industry output must be distributed among firms in a way that minimizes total industry cost. If some rearrangement of output among firms could reduce total cost, then an entrant whose size was consistent with that rearrangement could earn a profit at prices below that previously held (assuming frictionless free entry). The implication of the above propositions for the case of monopoly is that, in a contestable market, a monopoly cannot persist unless it is the least costly provider of its array of outputs.

2.4 Healthcare markets

Although no markets work perfectly (according to the neoclassical ideal situation outlined earlier), leaving the resource allocation process to be determined by market forces may still remain the best way of getting as close as possible to the outcomes of the perfectly competitive market. Many imperfect markets are highly competitive and therefore the 'competitive process' may be of benefit to consumers. Further, it has been argued that as long as markets are contestable, firms must operate efficiently.

However, healthcare is characterized by extensive government intervention in most developed countries, Table A.

Economics and healthcare

The basic reasoning underlying extensive government intervention in healthcare is that none of the ideal assumptions of perfectly competitive markets work in the case of healthcare, Donaldson and Gerard (1993). They argue that market failure in the allocation of healthcare is so complete that extensive government intervention is more likely to result in the achievement

of societal objectives than are market forces supplemented by minimal government intervention.

Table A:

Government intervention in healthcare: selected international comparisons

Country	% of healthcare government funded (1987)
Australia	84.5
Austria	60.9
Belguim	91.6
Canada	74.4
Denmark	83.4
Finland	78.8
France	71.2
Germany	78.2
Greece	79.3
Ireland	86.9
Italy	84.1
Japan	72.1
Netherlands	78.3
New Zealand	78.4
Norway	88.8
Portugal	71.1
Spain	72.3
Sweden	91.4
UK	88.9
USA	41.4

Source:OECD 1989

In healthcare markets the presence of uncertainty; externalities; imperfect knowledge on the part of the consumer; consumers unable to act free of self-interested advice from suppliers; and monopolistic suppliers all impede efficient market operation.

- *Uncertainty*

Uncertainty surrounds the consumption of many items of healthcare; deteriorations in health are often sudden or unexpected. In addition, the healthcare required to offset such health problems may be expensive and unaffordable. Health insurance markets may develop to counter the financial

burdens of the uncertain effects of ill-health. Such markets experience some problems similar to those encountered with publicly financed health services, as well as others such as moral hazard and adverse selection which give rise to the need for government regulation.

Moral hazard is basically a change in the attitudes of consumers and providers of healthcare which results from being insured against the full costs of such care. Zero or reduced price at the point of use encourages a higher rate of use than would otherwise be considered efficient (i.e. consumer moral hazard). Provider moral hazard can arise from a simple lack of awareness or from the use of fee-for-service remuneration methods for doctors in which fees depart from 'market prices'.

Adverse selection results from asymmetry of information in the insurance market whereby the best risks are selected out of the insured group. A consequence of adverse selection is that people may be left uninsured.

Moral hazard and adverse selection in healthcare markets are discussed further by Donaldson and Gerard (1993).

- *Externalities*

Externalities are spillovers from other people's production or consumption of commodities which affect the individual in either a negative or positive way, but which are out of the individual's control. The costs and benefits of such spillovers cannot be accounted for in market transactions, because when such transactions take place consumers and suppliers consider only costs and benefits to themselves. Markets rely on self interest, as Adam Smith (1976) put it:

> "It is not from the benevolence of the butcher, the brewer, or the baker that we expect our dinner but from their regard to their own interest. We address ourselves not to their humanity but to their self love, and never talk to them of our own necessities but of their advantages." First published 1776.

The reliance of the market on self interest leads to a misallocation of resources when externalities exist: oversupply when negative externalities exist and undersupply when positive externalities exist. An obvious form of positive externality in healthcare is the benefit to one's own health from other people's vaccinations. Further positive externalities may arise from knowing

that someone else is receiving needed healthcare even if this does not impact on one's own health status.

- *Imperfect knowledge*

The consumer of healthcare is often unaware of his health status and all the options available to contribute to an improvement in health; he has imperfect knowledge of the technological relationship between healthcare and health improvements or health maintenance. For many common ailments and some chronic conditions the consumer may be aware of his health status and the treatment options available, however, this is unlikely to be the case for more acute conditions such as cancers. Even in the case of minor or chronic ailments, information on new developments in treatment may get through to healthcare providers long before it reaches the consumer.

The accumulation of knowledge is also determined by the regularity with which one uses the market. Much medical care is not repeated, so that even if a consumer finds out that a treatment was not suitable, it will in many cases be too late to change to another. In other words, neither before nor after treatment can consumers easily acquire information to make an informed choice.

- *Consumers unable to act free of self-interested advice from suppliers*

As explained above, in markets, suppliers act in their own interest to provide commodities most highly valued by consumers relative to their prices. Given the lack of perfect knowledge on the part of the consumers of healthcare, doctors are often placed in the position of providing expert advice to consumers about care to be provided by themselves or their colleagues. Thus the supplier of healthcare is able to influence substantially the demand for healthcare. Moreover, there may be situations in which doctors have a financial incentive to provide care of no value or little value relative to its cost.

- *Monopolistic suppliers*

The existence of the information imbalance confers considerable monopoly power on the suppliers of medical services. As patients find it difficult to 'shop around' intelligently, it is less likely that doctors and hospitals will compete with one another. Each can operate as a monopoly raising prices and perhaps

offering a lower quality of service without fearing a substantial loss of customers. As Le Grand and Robinson conclude -

> "This is not to imply that all doctors act as rapacious exploiters out to extract as much profit as possible from their patients. Rather it is simply acknowledging that many of the incentives for efficiency normally present in a competitive market are conspicuously absent in that for healthcare." Le Grand and Robinson (1984) p41.

Market failure and healthcare is examined further in a number of texts: Le Grand and Robinson (1984), McGuire et al (1988), Donaldson and Gerard (1993).

Equity and access to healthcare are also problems resulting from a market allocation of healthcare. There are three conceptions of equity commonly used in a healthcare context (Le Grand and Robinson, 1984): a minimum standard of treatment for all in need; equal treatment for equal need; and equality of access or cost. In a private market, poor people may not be able to purchase the treatment they need - there is no guarantee that everyone will be able to obtain at least a minimum level of healthcare. Those with higher incomes are likely to purchase better treatment and consequently there will be unequal treatment for equal need. The price of healthcare would represent a greater sacrifice for the poor than the better off and therefore inequality of access would persist.

Healthcare systems in practice -an international context

There are essentially only four ways of financing healthcare:

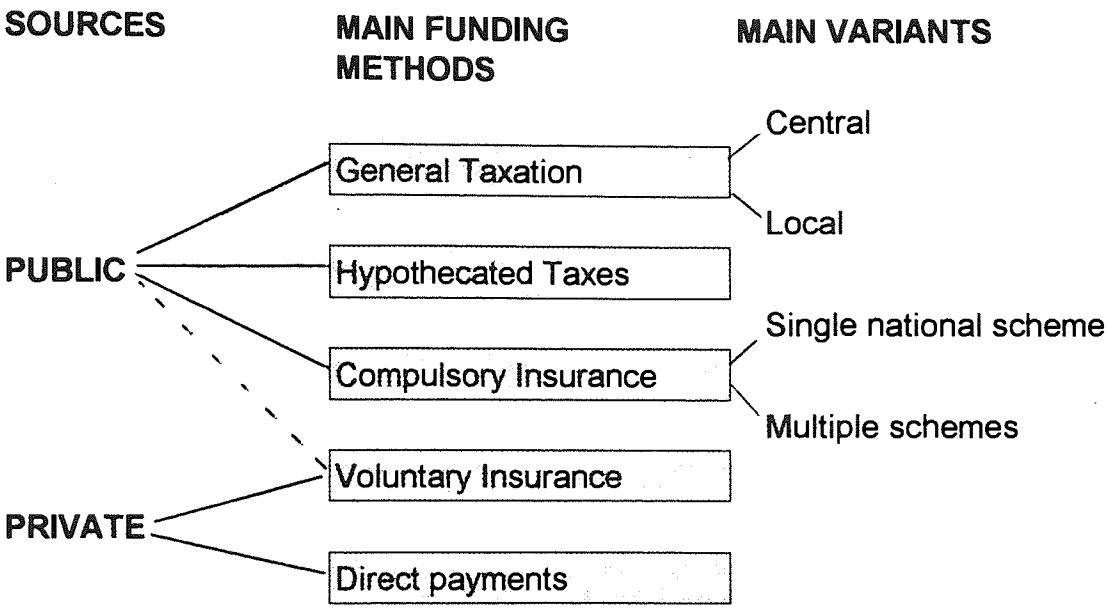
- direct payment by users;
- private health insurance;
- social or state insurance; and
- direct tax.

Within each method there are many variants, and there are many possible combinations of basic methods (and their variants) within one healthcare system (Figure 1). Healthcare in the UK is predominantly financed by direct tax, but has some direct payment by users (which have increased markedly in recent years) and a level of private insurance. The German and French healthcare systems tend towards social insurance. In the USA, the healthcare

economy is dominated by private insurance whilst in Sweden financing is more like that of the UK. The financing of selected OECD countries is summarised in Appendix B.

Figure 1:

Alternatives for healthcare financing



Source: Maxwell (1988)

All methods of funding have their weaknesses.Tax funding has many advantages, not least in enabling expenditure to be controlled, promoting equity and access, and allowing services to be provided to the whole population, but in the UK it has failed to deliver the volume of services demanded by the public (Jowell et al, 1988).

Social insurance offers a middle way between tax financing and private insurance. Social insurance is an earmarked tax levied on a narrower tax base than general taxation. Individuals are able to see their contribution is spent on health services, contributions can be increased or controlled in response to public pressure, and in some countries (e.g. Germany), certain people can opt out of the state scheme if they prefer to make their own arrangements. It is also possible to ensure that the costs of catastrophic illness will be met and that those out of work or on low incomes have coverage. However, increases in insurance contributions have been a cause for concern particularly when these have been used to finance a system of healthcare in which there is evidence of inefficiency and overprovision. Also

social insurance is a more regressive form of funding than general taxation and inequities can arise if social insurance is administered through sick funds setting different contribution rates.

The USA has the highest percentage of private financing (33% direct payments and 28% from insurance premiums, Appleby, 1993), over 37 million people are uninsured. Systems which rely on private finance have considerable difficulty in controlling overall expenditure and severe problems in achieving equitable access to services, these disadvantages are so great that Ham (1990) concludes -

> "The US experience demonstrates the shortcomings of systems that rely mainly on private insurance, and indicates that the real choice facing policy makers is between social insurance and tax funding." Ham et al (1990) p105.

As regards the overall level of healthcare expenditure there is again considerable variation between countries, Table B. It would appear that the overall level of spending on healthcare is much less important than the way in the which expenditure is distributed and healthcare delivered. Governments have attempted to tackle these problems through competition policy in some countries and regulation in others. A number of countries have experience of competition or have recently introduced competition into healthcare provision. In the USA, competition was promoted throughout the 1980s as a mechanism for containing costs. Cost sharing arrangements were extended to make consumers more aware of the real costs of their healthcare. Anti-trust legislation was employed to remove various restraints on trade, hence permitting greater competition between healthcare providers. Most important of all, various managed care schemes, e.g. health maintenance organizations (HMOs) and preferred provider organizations (PPOs), grew up in competition with traditional insurance and fee for service providers. However, it was found necessary to supplement competitive mechanisms with regulatory instruments such as the prospective payments system. The Dekker reforms in Holland sought to introduce a market-orientated approach into a social insurance system; selective contracting by purchasers was to be encouraged and consumers were to be enabled to choose between competing insurers. In Sweden, some county councils have contracted out health centres to private

providers and initiatives have been taken to introduce competition into public health services by giving consumers the choice of particular service providers and rewarding providers who are successful in attracting patients.

Table B:

Life expectancy and expenditure on health: selected international comparisons

Country	Life Expectancy at birth in 1992	Population in 1992 (millions)	Real GDP per head 1991 ($)	Total spending on health (% of GDP)	Spending per head on health 1991 ($)
Japan	78.6	124.5	19,390	6.8	1,771
Sweden	77.7	8.6	17,490	8.8	2,372
Spain	77.4	39.1	12,670	6.5	877
Greece	77.3	10.2	7,680	4.8	274
Canada	77.2	27.4	19,320	9.9	1,847
Netherlands	77.2	15.2	16,820	8.7	1,664
Australia	76.7	17.6	16,680	8.6	1,466
France	76.6	57.1	18,430	9.1	1,912
Israel	76.2	5.1	13,460	4.2	509
UK	75.8	57.7	16,340	6.6	1,003
Germany	75.6	80.2	19,770	9	1,782
USA	75.6	255.2	22,330	13.3	2,932
Ireland	75	3.5	11,430	8	886

Source: New York Times as reprinted in the Independant 28 September, 1994.

Although according to neo-classical economics healthcare cannot be allocated efficiently in an unregulated market system, neo Austrian economic theorists and advocates of contestable markets would argue that competition, managed appropriatey, could be an important stimulus to improved efficiency. Internationally, healthcare is predominantly financed through taxation or social insurance and largely provided in the public sector. However, outside the UK, there are recent initiatives relating to competition in healthcare. The development of internal markets for publicly financed health services in the UK is considered below.

2.5 Internal markets

Internal markets are not markets as the term is generally understood. They have not evolved naturally from existing factors of supply and demand; they are created markets by a business or organization which redefines the nature of supply and demand and establishes a new relationship between consumers and providers. The organization can through its initial definition of market parameters act as a powerful regulator, imposing either operating restrictions or financial controls to dictate the nature of the market.

The idea that market relationships can be used within organizations to improve communication flows and greater efficiency, is not unique to the public sector. Writers focusing on the marketing of services, such as Berry (1981) and Bateson (1985), suggest that market relationships can be used to improve the efficiency and productivity of employees, the actual 'service providers' of service firms. Fisk and Freshley (1981) suggested that market relationships could improve efficiency and communications between departments within an organization, as in the case of a clinical laboratory and other departments within a hospital. Market relationships have also been applied to industrial purchasing procedures, particularly in large vertically integrated companies in sectors such as electronics.

In the public sector the term internal or quasi markets has been used in relation to recent government reforms to introduce competition into publicly funded services. In 1988, the welfare state was the biggest area of non-market activity in the British economy consuming almost a quarter of the Gross Domestic Product. However, all this was to change in the late eighties when the Government introduced a series of radical reforms in key parts of the welfare state. The legislative programme which underpinned these changes included the 1988 Education Reform Act and the 1990 NHS and Community Care Act. Despite the breadth and diversity of the sectors involved, the reforms had a number of common features. In general, bureaucratic mechanisms of service delivery were replaced by competitive systems based on internal markets. In many of the reforms, in addition to decentralisation of decision-making, competition in provision was to be

introduced. State financing of the services was to be retained, but the state was to become primarily only a purchaser of welfare services, with direct state provision replaced by a system of independent provider organisations including not-for-profit organisations, private companies and state owned units under devolved management, competing with one another in internal or 'quasi'- markets. Le Grand and Bartlett 1993, explain -

> "They are 'markets' because they replace monopolistic state providers with competitive independent ones. They are 'quasi' because they differ from conventional markets in a number of key ways.....non-profit organisations competing for public contracts, sometimes in competition with for-profit organisations; consumer purchasing power either centralised in a single purchasing agency or allocated to users in the form of vouchers rather than cash; and, in some cases, the consumers represented in the market by agents instead of operating by themselves" Le Grand and Bartlett (1993) p 10.

Quasi markets now apply in education, healthcare, social care and housing. On the supply side, there are independent institutions (locally-managed schools, universities, hospital trusts, residential homes, housing associations, private landlords) competing for customers. Yet, in contrast to conventional markets, all these organisations are not profit-making or necessarily privately owned. On the demand side, consumer purchasing power takes the form of an ear-marked budget for the purchase of specific services allocated to users, or centralised in a purchasing agency. In most cases it is not the direct user who exercises the choices concerning purchasing decisions, such choices are assigned to a third party, such as a social services department or care manager in community care, or as explained below, a GP or health authority in health care.

Propper et al (1994) see the aim of the quasi-market reforms as to overcome the perceived defects of the bureaucratic organisation of the welfare state, particularly in the areas of efficiency, choice and responsiveness. However, there is concern that market failure and equity or access considerations will be major problems in these welfare quasi-markets.

2.6 The NHS Internal Market

In the 1989 White Paper an internal market for the NHS was seen as a mechanism for improved efficiency.

> "The reforms..... will enable a higher quality of patient care to be obtained from the resources which the nation is able to devote to the NHS.....Over time, any extra costs should be offset by the improved efficiency which will stem from them." Department of Health (1989a), para 13.3, p101.

In the internal market, district health authorities (DHAs) contract with hospitals to provide specified services in return for agreed funding. To facilitate competition between hospitals, the government introduced a number of self-governing trusts (Department of Health, 1989b). From April 1994, 95% of hospital and community health services are provided by trusts (Robinson and Le Grand 1994). Although still part of the NHS, these hospitals are free from control by DHAs and operate as self standing business units. Trust hospitals and directly managed hospitals under the internal market earn their revenue according to the services they supply. Previously, the national NHS budget was allocated to regional health authorities which then allocated funds to district health authorities which in turn allocated a global budget to the individual hospitals/ units they managed. The White Paper explained the new arrangements as follows -

> "In future, each DHA's duty will be to buy the best service it can from its own hospitals, from other authorities' hospitals, from self-governing hospitals or from the private health sector. Hospitals for their part will have to satisfy districts that they are delivering the best and most efficient service. They will be free to offer their services to other district health authorities." Department of Health (1989a) paragraph 4.23

Contract funding brings about an effective separation of health authority functions: the responsibility for ensuring that the health needs of the population are met (i.e. the commissioning role) and the management of supply. While existing district health authorities are the main purchasers, at least in the short run, large General Practitioner (GP) practices have the opportunity to become budget holders to purchase selected hospital services (DoH,1989d). Similarly to DHA purchasers, the GP fundholder contracts with providers of healthcare for their services on behalf of the practice's patients.

GP fundholders (GPFHs) have grown unexpectedly and in 1993/94 covered one in four of the population (DoH, Management Executive 1993). Comparisons of the Old and New NHS as perceived by the Department of Health, are set out in Appendix C.

The Government described three forms of contract, DoH (1989c): block contracts; cost and volume contracts; and cost per case contracts: block contracts relate to funding a level of capacity; cost and volume contracts specify a base-line level of activity, beyond that level, funding is on a cost per case basis. In addition, hospitals will sometimes undertake extra-contractual referrals (ECRs). These may arise for example when a GP refers a patient to a hospital where the DHA within which the patient resides has not negotiated a contract or perhaps the patient is admitted as an emergency e.g from a motor accident to a hospital where the DHA has no contract.

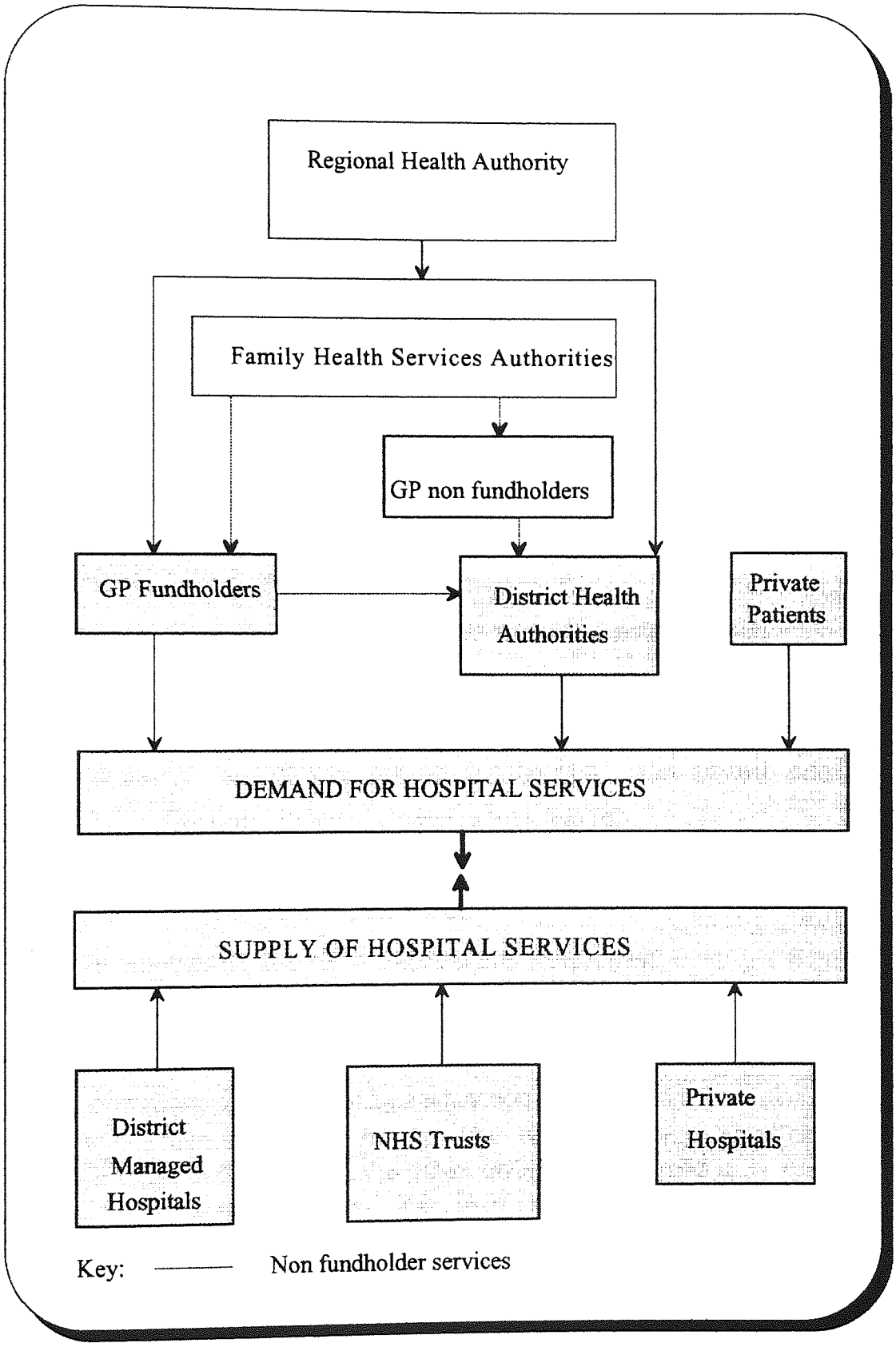
> "Hospitals need to keep their costs, including capital and other overheads, within the income they earn from contracts, and will accordingly need to aim for realistic pricing policies...The development of the contract system will require improved management information both for pricing and for control (including monitoring performance as well as financial control)." Department of Health (1989c) para 2.15.

The Department of Health's approach on the pricing of contracts was set out by the NHS Management Executive in October, 1990. The fundamental principles are:

- contracts should generally be priced at cost;
- all costs including depreciation at current cost and 6% interest on capital assets should be included; and
- there should be no planned cross-subsidisation.

Whilst providers were given a large degree of discretion in the detailed application of the principles, the requirement for the documentation of the pricing process for audit purposes was stressed (NHS Management Executive, 1990d). The assumed volume of service over which full costs should be recovered, should include all expected activity in the year, including anticipated extra- contractual referrals (ECRs). Marginal cost contracts are only permissible where there is unplanned spare capacity in excess of the assumed volume of service. The net costs to be recovered through income from services should take account of planned cost improvements.

Figure 2: The NHS Internal Market - Flow of Funds and Services



The internal market shown in Figure 2 meets Le Grand's definition of a quasi-market (Le Grand 1991). The healthcare providers, namely NHS trusts, directly managed units and independent hospitals compete for healthcare contracts replacing the centrally planned monopolistic provision. On the demand side, the consumer purchasing power is represented by agents, district health authorities and GP fundholders. Common problems associated with healthcare markets generally are alleviated in the NHS internal market. DHAs and GPFHs acting as agents for patients, can reduce some problems relating to imperfect knowledge and monopolistic suppliers, but other problems remain. The introduction of GP fundholding provides scope for adverse selection or 'cream-skimming' (Matsaganis and Glennerster 1994). DHAs have no opportunity to cream-skim as their clients are simply allotted to the DHA. However, GPFHs can compete for the custom of patients on whose behalf they purchase services, thus there may be an incentive, in certain circumstances for the GPFH to cream-skim (Weiner and Ferris 1990) - although, as yet, there appears little evidence of this actually happening in the UK (Glennerster et al 1992). The separation of the purchasers and providers of healthcare and the introduction of trading in healthcare services necessitates an appropriate pricing mechanism, cost based pricing is perceived by the Department of Health to fulfil this role.

2.7 Alternative Governance Structures

The transaction costs approach: markets and hierarchies

The existence of the pre-Reform NHS (and other large producer organisations) can be explained not only by market failure and equity and access considerations, but also by transaction costs.

> "A transaction cost is any activity which is engaged in to satisfy each party to an exchange that the value given and received is in accord with his or her expectations." W.G. Ouchi, (1993) p247.

Coase (1952) pointed out that where transaction costs are sufficiently important, the market (as a system of resource allocation) can logically be set aside, and transactions internalised within firms or organisations.

'The nature of a firm', Ronald Coase's classic 1937 article transformed the nature of mainstream economic theory (Pitelis, 1993). In the pre-Coase era, economics was exclusively concerned with the analysis of the allocation of scarce resources through the price mechanism, 'the market'. Following Coase's article, though it apparently took some time before Coase's 'fundamental insight' was taken seriously (Coase, 1991), economic theory recognised that resources are allocated by two different institutions, markets and firms. The vertically integrated firm exists because in certain cases it is a more efficient means of resource allocation than the price mechanism, in terms of 'marketing costs' (the cost of using the price mechanism; Coase, 1937, p403). Williamson (1971) pursued Coase's line to explain the failure of markets to organise transactions between vertically related, technologically separable stages of production. Under certain conditions, markets are more efficient because they can mediate without paying the costs of managers, accountants or personnel departments. Under other conditions, a market mechanism becomes so cumbersome that it is less efficient than a bureaucracy.

In a perfectly competitive market, transactions are carried out without transaction costs. Information is freely available, decision making is rational, there are always alternative suppliers and buyers and there are no carryover effects from one period to the other of a specific transaction between two parties in the market. When these conditions do not prevail, transaction costs emerge because there is a need to devote efforts to organizing, carrying out and controlling transactions among independent actors. The transactions cost approach tries to explain the institutional forms, that is the 'governance structure' (market, hierarchy or intermediate forms) of these transactions. This perspective suggests that monopolies can result from transactional efficiency reasons, it therefore complements the neo-Austrian approach in challenging the long held suspicion of monopoly and oligopoly in traditional welfare economics.

In analysing the institutional forms, behavioural characteristics are postulated: bounded rationality and opportunistic behaviour. These are examined under

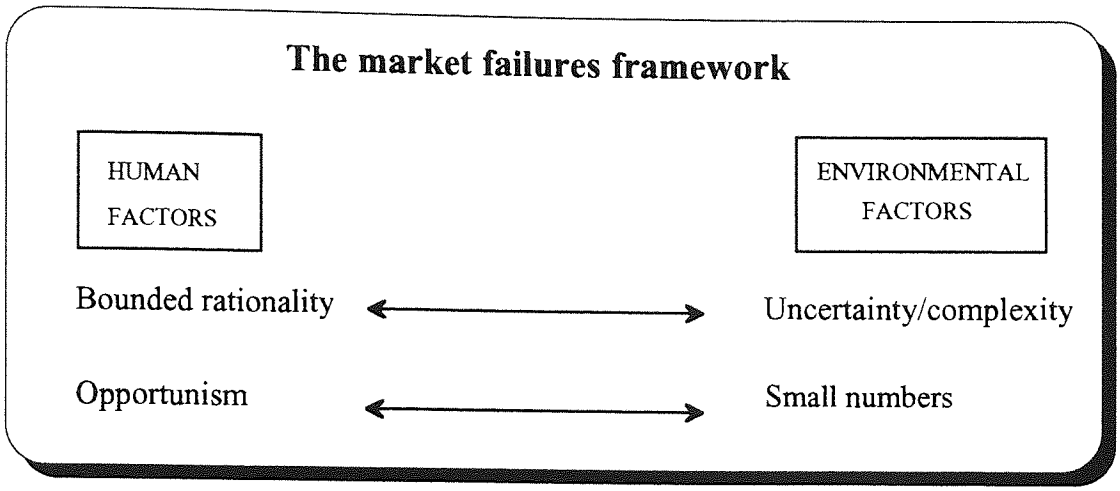
varying conditions of uncertainty; 'small numbers'; asset specifity and frequency of transactions.

Under *certainty* it is possible, ex ante, to gather information to specify contracts between supplier and buyer and to take care of various future contingencies; and also ex poste to control the fulfillment of the agreement between the parties. However, under uncertainty, contracts become very complex and costly both to construct and enforce especially when *small numbers* of actors are bargaining.

'Small numbers' means that there are few, if any, alternatives open for a buyer or for a seller to replace each other in a transaction. The major reason for this situation is high *asset specificity*: personal knowledge or skills, the type of machinery or products, the geographic location etc. are not homogeneous across the population of buyers and sellers. The higher the asset specificity, the more dependent the parties will be on each other, and the higher the costs of switching to another party will become. If there are only occasional transactions and the asset specificity is very high, there is no opportunity for vertical integration and the market transaction must be developed with the aid of some arbitrating agency. If the *frequency* is high and the asset specificity is high, the transactions cost approach expects vertical integration to take place. Ouchi developed Williamson's market failures framework (Figure 3) below. No one of the four conditions is seen as producing market failure, but "almost any pairing of them will do" (Ouchi 1993). Market failure relating to neoclassical economic analysis is not the only cause of alternative governance structures, the transaction cost approach offers a new dimension to the search for efficiency. As McGuinness (1993) states

> "The hallmark of economic analysis is how to make best ('efficient') use of resources that are in scarce supply. In situations that involve uncertainty, bounded rationality and opportunism it is important to economise on resources used in negotiating, implementing and adapting contracts as well as on those used for more narrowly defined productive tasks. The efficient objective is to minimise the sum of production and transaction costs for the tasks required" McGuinness (1993) p70.

Figure3:



Source: Adapted from Williamson (1975) p 40.

Further typologies: clans and networks

Coase (1937) made a sharp delineation of markets and hierarchies. Threefold typologies (Ouchi 1980, Williamson 1985) simply add a category to the market and hierarchy dichotomy. Ouchi developed the 'clan'. Industrial organizations can, in some instances, rely to a great extent on socialization as the principal mechanism of mediation or control, and this 'clan' form can be very efficient in mediating transactions between interdependent individuals. Ouchi argues that in certain organisations e.g Japanese firms, it is not necessary to measure performance to control or direct employees, since the employees' natural (socialized) inclination is to do what is best for the firm. It is also unnecessary to derive explicit, verifiable measures of value added, since rewards are distributed according to non-performance related criteria which are relatively inexpensive to determine (e.g length of service). Ouchi regards the critical elements of efficiency to be:

- ambiguity of individual performance measurement
- congruence of employee's and employer's goals.

Market relations are efficient when there is little ambiguity over performance, so the parties can tolerate relatively high levels of opportunism or goal incongruence. Bureaucratic relations are efficient when both performance ambiguity and goal incongruence are moderately high. Clan achieves

efficiency when there is high performance ambiguity and low opportunism. The requirements of each organisational form are outlined in Figure 4 .

Figure 4:

An organisational framework

MODE OF CONTROL	NORMATIVE REQUIREMENTS	INFORMATIONAL REQUIREMENTS
Market	Reciprocity	Prices
Bureacracy	Reciprocity Legitimate rules	Rules
Clan	Reciprocity Legitimate authority Common values and beliefs	Traditions

Source: Ouchi 1993, Markets, bureaucracies and clans, p253.

Reciprocity is defined as each party regarding the transaction as equitable. Prices are regarded as a highly sophisticated form of information for decision making. It is acknowledged that 'correct' prices are difficult to arrive at, particularly when technological interdependence, novelty or other forms of ambiguity obscure the boundary between tasks and individuals. Rules are generally specific to individual problems and therefore a large number may be required with exceptions being referred upwards. Under uncertainty or complexity, the number of exceptions is so great that the system becomes overloaded with a consequent reduction in decision quality (Galbraith 1973). On the other hand, traditions are implicit rules, stated only generally. Hence they are crude in terms of performance evaluation, but may provide a uniform philosophy etc. and therefore provide 'a very elegant and complete form of control' Ouchi 1993.

Powell also explains the need to extend the twofold market and hierarchies typologies -

> "When the items exchanged between buyers and sellers possess qualities that are not easily measured, and the relations are so long and recurrent that it is difficult to speak of the parties as separate entities, can we still regard this as a market exchange?.....entangling of obligation and reputation reaches a point that the actions of the parties are interdependent, but there is no common ownership or legal framework....such an arrangement is neither a market transaction nor a hierarchical governance structure, but a separate,

different mode of exchange, one with its own logic, a network." W.W. Powell (1993), p268.

He goes on to provide a stylised comparison of markets, hierarchies and networks, shown in Table D below.

Table D:

Stylized comparison of forms of economic organisation			
	FORMS		
KEY FEATURES	MARKET	HIERARCHY	NETWORK
Normative base	Contract - property rights	Employment relationship	Complementary strengths
Means of communication	Prices	Routines	Relational
Methods of conflict resolution	Haggling - resort to courts for enforcement	Administrative fiat supervision	Norm of reciprocity - reputational concerns
Degree of flexibility	High	Low	Medium
Amount of commitment among parties	Low	Medium to high	Medium to high
Tone or climate	Precision and / or suspicion	Formal, bureaucratic	Open-ended, mutual benefits
Actor preferences or choices	Independent	Dependent	Interdependent
Mixing of forms	Repeat transactions (Geertz 1978) Contracts as hierarchical documents (Stinchcombe 1985)	Informal organisation (Dalton 1957) Market-like features: profit centres, transfer pricing (Eccles 1985)	Status hierarchies Multiple partners Formal rules

Source: Powell (1993), p 268.

However, although Coase (1937) saw markets and hierarchies as mutually exclusive means to govern transactions, elements of the ideal forms are often found mixed together empirically, markets and hierarchies are often combined (Eccles 1985, Stinchcombe 1985.) Indeed it is now widely accepted that myriad organisational forms exist along with markets and hierarchies (Bradach and Eccles 1993). In particular, much research has pointed out the existence of stable long-term relationships between independent exchange

partners. Co-operative arrangements (Richardson 1972), relational contracting (MacNeil 1978, Goldberg 1980), joint ventures (Mariti and Smiley, 1983), quasi firms (Eccles, 1981), global coalitions (Porter and Fuller, 1986) and dynamic networks (Miles and Snow, 1986) are but a few of the names these complex forms go by.

Thompson (1993) rationalises clans and networks by classifying Ouchi's bureaucracy and clan as hierarchical-competitive systems and hierarchical-cooperative ones respectively; and classifying markets and networks as independent-competitive systems and independent-cooperative ones respectively, Figure 5.

Figure 5: Organizational Form and Approach to relationships

ORGANIZATIONAL FORM	APPROACH TO RELATIONSHIPS	
	Competitive	**Cooperative**
Independent	Classic market	Network structure
Hierarchical	Bureaucracy	Clan

NHS Governance structures

Lapsley (1993) argues that the NHS has been transformed from a 'clan' form of governance to a market model. The NHS has been characterised as an organisation which has been dominated by the medical profession (Bourn and Ezzamel, 1986; Burke and Goddard 1990). Bourn and Ezzamel describe the medical profession as a clan; they argue the NHS is typified by high goal congruence on the part of the medical profession and by high performance ambiguity (which is tolerated by clan members) and that this has given rise to the 'clan'. The medical profession was seen as one distinct, dominant sub-culture within a complex organisation (an 'enucleated bureaucracy'). This model of governance led to unnecessarily lengthy delays in decision making, to behaviour which was geared to problem avoidance rather than solution and to 'institutionalised stagnation' (Griffiths 1983).

These criticisms gave rise to the reform of the NHS hierarchy by implementation of the 'general management model which emphasised the importance of new accounting controls'. The medical clan under the 'management budgeting' initiative would have financial responsibilities within

the formal hierarchy of the NHS. This was largely a story of failure due to inadequate resources; an over-ambitious timescale and limited appreciation of the complexities and nuances of introducing such a substantive change in the face of strong professional independence (Perrin 1988). Similarly, management budgeting's successor, 'resource management' made 'slow and patchy progress' (Packwood 1991). It would appear that, as predicted by Bourn and Ezzamel, the control exerted by the medical clan (as constrained within the 'enucleated bureaucracy') retained an important role in the governance of the NHS, throughout the attempt to implement an explicit, rules-based, managerial hierarchy in the 1980s.

The 1989 White Paper prescribed a market solution for the regulation of the NHS - the creation of an internal or quasi-market in health care (DoH 1989). Lapsley contrasts the changes in governance modes in the NHS with those of the private sector, Figure 6.

Figure 6:

Dominant modes of governance: an inversion of private sector and NHS experiences

PRIVATE SECTOR	NATIONAL HEALTH SERVICE
Markets ↓ Hierarchies ↓ Corporate cultures	Clan-based/ culture control ↓ Hierarchies ↓ Markets

Notes:

- It is important to note that these alternative modes of governance are described as dominant,i.e. Markets, Hierarchies proponents would recognise that hybrid forms of governance may exist and that there may be a mixture of modes of governance at any point in time
- It is not suggested that these shifts occured in parrallel. The switch from markets to hierarchies in the private sector has been documented by, for example, Chandler (1977) as occurring to a large degree at the end of the last century and the early part of this century, whereas the NHS was not established until 1947. The important issue is the inversion per se, not the time frame.

Source: Lapsley (1993) Figure 1.

Lapsley points out that whilst the aim of the internal market is to increase the efficiency of healthcare provision and, thereby to increase the overall level of patient care without concomitant additional resources, it has been criticised as

being inappropriate on a number of grounds. In terms of the markets and hierarchies theory, the transaction costs of operating such a system are high. Usually the transactions involved in the process of market exchange are rather straight forward and the associated contract is easily specified by a verbal agreement. As the British Medical Association (BMA) has pointed out, this is not the case in healthcare.

> "Contracts for specified services implies viable packaging arrangements which meet every eventuality. Flexibility would be essential to meet the great variation in general health status among different patients requiring the same package. A young fit adult with a hernia would require less overall hospital treatment than an elderly, unstable diabetic with the same condition." BMA, 1989.

Where transactions are multi-dimensional, and outcomes are contingent upon an uncertain environment or 'state of nature', then the associated contracts (which Williamson refers to as 'contingent claims contracts') will be difficult to write, implement and enforce and the associated transaction costs will be high. This may well be the case in the NHS internal market. More specifically, high transaction costs are associated with the specification of contracts because:

- there is considerable uncertainty, not only over the cause and effect of certain treatments, but also because of the unpredictable nature of much non-elective health care.
- the sheer scale of the number of contracts which would be required to be placed on a cost per case contracting system places limits on decision makers, both purchasers and providers (bounded rationality) and
- there is scope for opportunistic behaviour within this system (Burke and Goddard, 1990; Bartlett 1991). Although in principle complete cost per case contracts could be specified, the associated transaction costs due to the increased costs of administration and information processing would probably add significantly to the average costs of running the health service. On the other hand, block contracts will not relate price to every eventuality, this incompleteness leaves scope for opportunistic behaviour which in turn will lead to costly medical audit and or performance targets which will be expensive to administer.

The focus of the thesis is the major difficulties for health care providers in generating sufficiently precise costing information to enable appropriate contracts to be made.

Now that decisions on levels of activity lie within the hands of purchasers and providers, the position of the medical clan will be weakened, but this may prove to be inappropriate, in Ouchi's terms, on account of the perceived high goal congruence within the medical profession and the ambiguity over what constitutes good performance in healthcare. Furthermore, the implementation of a market mechanism with high transaction costs may fail and require some form of hierarchical or rules-based intervention to reduce or minimise such costs. Following Thompson's analysis of organizational forms (Figure 5), it is also quite possible that in the move from a bureaucratic or clan form of NHS organisation, networks using co-operative relationships may be paramount rather than the classic market. Pricing is crucial within markets, but rules, traditions or relationships may emerge as dominant in the new NHS.

2.8 Summary

Markets provide a mechanism for allocating resources. Perfectly competitive markets, according to neo-classical economics, provide the most efficient means of resource distribution. The neo-Austrian school, on the other hand, propound the benefits arising from the competitive process per se. Advocates of contestable markets go a stage further and argue that, in terms of efficiency, contestable markets can compare favourably with the neo-classical perfect competition model.

Healthcare systems are subject to substantial state intervention. The reasons often given for such extensive intervention relate to market failure in relation to the neo-classical model and equity considerations. However, that is not to say that healthcare systems cannot benefit from the 'competitive process' nor achieve some of the efficiency gains of contestable markets. The internal market arrangements of the NHS, whilst not removing the financing of healthcare from general taxation, introduce competition between healthcare

providers. Healthcare purchasers (DHAs and GPFHs) are expected to place contracts with providers who 'offer the best value'.

Consideration of transaction cost economics leads to investigation of alternative governance structures. Efficiency gains from competition must outweigh transaction costs if more or improved healthcare is to be gained through the NHS internal market. Uncertainty, 'small numbers', asset specifity and frequency of transactions must be considered in determining appropriate governance structures. The NHS internal market will weaken the medical 'clan' whilst high transaction costs may require some form of hierarchical or rule-based intervention to reduce or minimise such costs. The internal market may exhibit features more akin to networks than the classical market.

Within markets, the price mechanism is crucial to the achievement of efficiency gains. Markets (whether taken from a neo-classical, neo-Austrian or contestable market perspective) operate via price signals. The scope for realising efficiency savings in the NHS internal market and the price mechanism necessary for driving the NHS towards such efficiencies are considered in the next chapter.

Chapter Three

ECONOMIC EFFICIENCY AND COST-BASED PRICING

3.1 Introduction

The NHS internal market was introduced to promote efficiency. Firstly, this chapter examines the scope for economic efficiency in the NHS. Price mechanisms, the basis of market operation, are then considered. Healthcare pricing theory and experience is examined in the light of the market's espoused efficiency aims and the prescribed cost-based pricing regime set out by the Department of Health. Accounting information for pricing decisions and appropriate cost 'products' are discussed before examining different methods of attributing hospital costs. Finally, the research hypothesis is postulated within a framework for cost-based pricing and economic efficiency in the NHS internal market.

3.2 Economic Efficiency and the NHS

The aim of efficiency is firmly rooted in the NHS reforms. The concept of an internal market for healthcare in the UK had been propounded some years earlier by an American economist who saw its principle advantage as efficiency.

> "The theory behind such a scheme is that managers would then be able to use resources most efficiently. They could buy services from producers who offered good value They could use the possibility of buying outside as bargaining leverage to get better performance from their own providers. They could sell off assets such as valuable land in order to redeploy their capital most effectively. Unlike the normal bureaucratic model, they would not get money for doing a poor job with what they have.....The underbedded areas could buy services from the overbedded areas if, in their judgement, that was the way to get the best deal for their patients. The flow of services to people could be adjusted smoothly and rapidly without the need for facilities to be built or closed." Enthoven (1985) p40.

Incentives for economic efficiency

Enthoven saw the structure of the pre-reform NHS as holding perverse incentives to efficiency:

- The efficiency trap.

In the pre-reform NHS "efficient" hospitals were in effect penalised for treating more patients - "the efficiency trap". If a hospital increased admissions by higher bed utilisation, the efficiency indicators of average cost per case and average cost per patient day would improve through the spreading of fixed costs over a larger workload, however, the overall fixed budget would be overspent because of the increase in variable costs.

> "a District that develops an excellent service in some specialty that attracts more referrals is likely to get more work without getting more resources to do it. A District that does a poor job will 'export' patients and have less work, but not correspondingly less resources for its reward.....In a rational economic model, those whose quality of service attracts more patients would get paid (for doing the extra work) a negotiated amount that they agreed makes the effort worthwhile." Enthoven, (1985) p13.

In the internal market the efficiency trap is alleviated to some extent through funding health authorities according to their resident populations and then enabling money to flow with the patient. The extent to which the "efficiency trap" remains will depend on the nature of the contracts placed and how they are priced.

- NHS waiting lists.

Enthoven argues that there is status in waiting lists which provides further perverse incentives to efficiency.

> "A consultant's NHS waiting list creates a demand for his services by private pay patients. Thus clearing a waiting list is directly opposed to the economic interest of the consultant." Enthoven, (1985) p14.

He goes on to argue that the waiting list phenomenon is aggravated by the fact that GPs referring patients to other Districts with low waiting lists risk antagonising consultants in their own Districts: GPs who 'want a good reception for their patients when they need it, must play the referral game to the satisfaction of consultants in their own Districts'.

In the internal market, the workload should be determined through the placing of contracts.

- New facilities

In the pre-reformed NHS, hospital managers and consultants risked weakening their case for new facilities if they reduced the waiting list by

referring patients to other hospitals with excess capacity. As Enthoven pointed out, the cure for this incentive is to structure the budgeting system so that resources are determined by an impersonal mechanism that does not provide more resources for less efficiency.

In the internal market, the viability of new capital developments depends on their future generation of contract income to cover costs (including a return on capital), a business case must therefore be made.

- GP referrals.

GPs have weak or no incentives to reduce referrals. However, the introduction of GP fundholding in the internal market, does provide an incentive to reduce referrals for fundholding services - the GP can use savings made on his GPFH budget for the benefit of his GP practice.

Enthoven concluded that it was in the area of incentives that the NHS structure was weakest.

> "It relies on dedication and idealism....But it offers few positive incentives to do a better job for the patients, and it has some perverse ones. "Enthoven, (1985) p18.

In proposing an internal market system he accepted that it "would not include powerful incentives for management to make efficiency-improving changes, but it would remove some of the disincentives."

Scope for economic efficiency

There are basically two distinct uses of the term efficiency. On the supply side, there is the concept of productive or technical efficiency which refers to the reductions in the cost per unit of a good or service. Technical efficiency in the provision of healthcare exists where the costs of producing or maintaining a given output are minimised and the utility of individual's preferences is maximised for a given cost. On the demand side, there is the more general concept of allocative efficiency. This latter term encompasses productive efficiency but also measures the extent to which the output of service is consistent with consumer preferences (Robinson, 1988). Allocative efficiency considers how to maximise the benefit from available resources (Mooney,

1992). Thus allocative or 'high-level' efficiency addresses the question of whether the level and mix of services does most good with the resources available i.e. meets consumer demands. In the context of the NHS internal market, the overall level of financial resources is determined outside the market, but it is still important to consider whether the best package of healthcare is delivered to consumers within the budget constraints. The optimal mix requires the maximisation of patient welfare. In order to achieve maximisation of patient welfare not only must the cost per unit of healthcare be minimised, the service mix, including access to services and their quality, must be consistent with consumer demands.

By allowing funds to flow to healthcare providers according to the contracted workload undertaken, the efficiency trap for an individual hospital can be removed, but extra funds gained by one provider will be at the expense of another. Thus in order for benefits to arise to the NHS as a whole, incentives must be given to encourage allocative and productive efficiency.

There are three specific sources of potential productive efficiency gain that might be expected to follow from the introduction of the NHS internal market: reductions in X-inefficiency; lower costs from economies of scale and scope; and lower costs from reductions in input prices. In addition, the reforms may improve allocative efficiency through increased consumer choice with a more varied range of services more closely meeting consumer preferences.

- Reductions in X-inefficiency

Most organisations display different degrees of X-inefficiency, that is, a divergence between actual and minimum costs.

> "For a variety of reasons people and organisations normally work neither as hard nor as effectively as they could. In situations where competitive pressure is light, many people will trade the disutility of greater effort, of search, and the control of other peoples' activities for the utility of feeling less pressure and of better interpersonal relations. But in situations where competitive pressures are high and hence the costs of such trades are also high, they will exchange less of the disutility of effort for the utility of freedom from pressure, etc." Liebenstein 1966, p413.

A firm's failure to adopt the most efficient means of production will lead to higher prices, a loss of custom and reduced profitability. In the NHS there is

evidence that hospitals vary in the extent to which they achieve efficient levels of capacity utilisation. Failure to maximise the use of operating theatres, beds and staff time have been highlighted (National Audit Office 1987, Yates 1987). The Audit Commission has criticised poor use of day case facilities (Audit Commission, 1990) and called for the rationalisation of the capacity of pathology laboratories (Audit Commission, 1991).

- Lower costs from economies of scale and scope

Economies of scale arise when the cost per unit of output falls as the scale of production increases. There have been surprisingly few econometric studies of health service, cost-output relationships in the UK, in 1989, Wagstaff concluded that those which had been carried out suggested a U-shaped cost function with minimum costs reached at 430 beds or more (Wagstaff, 1989). However, a more recent study in the UK indicates that there are decreasing returns to scale up to a capacity of 715 beds (Bartlett and Le Grand, 1992), but this study ignored capital costs. A recent US study has also found diseconomies of scale in hospitals with low capacity (Vita 1990). Nevertheless, practical experience, for example provision of certain multi-district or regional specialties at a small number of designated sites suggests that there are likely to be cost savings from rationalising services on fewer sites. In 1972, Berki expressed the following view when trying to make sense of hospital cost functions:

> "Economies of scale exist, may exist, may not exist, or do not exist, but in any case, according to theory, they ought to exist." S.E Berki (1972) p115.

Twenty years later, it is still difficult to validate the theory.

More recently economic analysis has developed the concepts of subadditivity and economies of scope.

> "A cost function is subadditive for a particular output vector *y* when *y* can be produced more cheaply by a single firm than by any combination of smaller firms." Baumol, Panzer and Willig, (1988) p170.

However, subadditivity is very difficult to analyse - it cannot be recognised by looking at a mathematical expression or graph of the cost function, indeed it requires knowledge of all possible cost functions for output vector smaller than *y*.

Economies of scope also developed from the study of scale economics (Panzar and Willig, 1975). This concept refers to situations in which the cost of producing two products in combination C(A,B), is less than the total cost of producing each product separately, C(A,O) + C(O,B). Panzer and Willig (1977, 1979) showed that the ideas of economies of scope and overall and product-specific returns to scale are inextricably related. Economies of scope and overall and decreasing average incremental costs in each product line together imply both overall scale economies and strict subadditivity.

In the NHS internal market it is likely that considerable economies of scope are present. For example if products are taken as specific hospital treatments it is obviously more efficient to provide a number of ENT procedures rather than just one or two (the consultant and his medical team can cover a wide range of treatments, indeed such a range is necessary to maintain medical skills).

- Reductions in input prices.

Over and above any reductions in costs per unit resulting from increases in productivity (discussed under X-inefficiency above) it may be possible through competition to reduce the prices of inputs. According to economic theory, competition in the market for factor inputs ensures that that no factor earns a surplus rent payment as a result of monopoly or other barriers to competition. In the conditions existing before the reforms, input prices have been relatively invariant across hospitals, owing to the centralised and administrative system of input procurement and wage bargaining. The introduction of trust hospitals able to determine their own rates of pay and conditions will lead to input price variations for labour which account for over 75% of the costs (excluding capital costs) of the average hospital. However, the freedom for individual hospitals to determine their own rates of pay has been identified as a potential source of cost escalation, (Barr et al., 1989, Mayston 1990). Further efficiency savings may result from changes in the skill mix, for example, utilising more staff nurses and fewer sisters etc..

- Consumer choice, quality of services and equity.

In competitive markets, the responsiveness to consumer demands is taken to be a necessary prerequisite for financial success and/or survival. In the NHS internal market, the purchasers of healthcare are DHAs and GPFHs not the consumers of health care. GPFHs may have discussions with patients about appropriate forms of hospital treatment, this together with the greater freedom for patients to change GPs offers enhanced consumer choice. However, most health care will be covered by contracts placed by district health authorities, the link between consumer demands and contracts placed for service provision is weak. There is a danger that cost-conscious DHAs faced with cash-limited budgets and GPFHs will pursue least-cost service contracts. In an attempt to avoid this measuring quality is embodied in the internal market arrangements (DoH 1989a). DHAs have to ensure that service contracts include details of the facilities to be made available, criteria for the admission and discharge of patients, maximum waiting times and measures of the quality of clinical care (DoH 1989e).

Equity considerations are important in healthcare and can influence efficiency. Equity can be viewed as having two principal dimensions over and above the provision of a minimum level of healthcare. Horizontal equity is concerned with the equal treatment of equals i.e. providing the same amount of healthcare for individuals who are identical in terms of all relevant characteristics such as age, sex, health status, geographical location etc.). The second dimension of equity concerns the 'unequal treatment of unequals' (McAlistair, 1994) or vertical equity. The pursuit of vertical equity may require a trade off with efficiency. McAlistair gives health prevention as an example where it may be the case that reducing risks by a little for the majority of the population will save fewer lives than if the same level of resources was concentrated on the minority most at risk. In the internal market, differential access in clinical activities could arise between geographical areas if trade in clinical services results in some specialties becoming concentrated at a smaller number of hospitals. There is also the danger that the internal market could distort the pattern of service provision remaining in the geographical

area. For example, easily specified services covering minor elective surgery - involving short stays and minimal complications after discharge - may appear more attractive to managers than some forms of longer stay, less predictable, geriatric care. Service planning priorities may be distorted.

In 1989 there were undoubtedly inefficiencies within the NHS, not surprisingly in an organisation which had weak or perverse efficiency incentives and spent over £27bn per annum. The internal market arrangements offer a potential means of reducing some production inefficiencies, but there are also wider problems relating to access to services and the mix of health services if allocative efficiency is to be addressed.

3.3 Price Mechanisms

Markets require a price mechanism. In neo-classical economics, prices act as the crucial equilibrating mechanism; in the neo-Austrian approach, less emphasis is put on price, but it is still an essential signal in the competitive process; similarly, under contestable market theory, potential entrants assess their financial prospects by making use of the current prices of incumbent firms. In the NHS internal market, an appropriate pricing mechanism is necessary to provide signals to (potential) competitors and to direct purchasers to efficient providers.

Incentives to respond to price signals

In competitive markets suppliers are motivated to achieve productive efficiency and to respond to market signals by the desire to maximise profit. In the NHS internal market, because of the absence of claimants to residual income, it could be argued that suppliers will face weak incentives to maximise profits which could lead to productive and allocative inefficiency. On the other hand, Griffiths(1983) argued that even the pre-reform NHS was not that different from the private sector -

> "In many organisations in the private sector, profit does not immediately impinge on large numbers of managers below Board level. They are concerned with levels of service, quality of product, meeting budgets, cost improvement, productivity, motivating and

rewarding staff, research and development, and the long term viability of the undertaking. All things that Parliament is urging on the NHS." p10.

Furthermore, in a competitive market the scope for discretionary behaviour is severely limited by the erosion of excess profit in the move towards equilibrium. Even in the absence of the profit-maximising objective, Ferguson and Posnett (1990) claim that the best guard against organizational slack is the operation of the competitive process itself. Indeed, proponents of contestable market theory, argue that the maximisation of competition for public service markets and the threat of possible new entrants is the single most effective means of ensuring maximum efficiency in service provision, preventing excess profits being earned by the exploitation of captive consumers, and ensuring adequate quality of service (Bailey 1981, Baumol, Panzar and Willig 1988, Bailey and Baumol 1984).

Non price competition

If the NHS internal market approach is to achieve its espoused efficiency aims, it is essential that competition is on the basis of price and not on the basis of non price factors. Marketing, advertising, product differentiation, and market segmentation, all forms of non price competition, dominated US hospital competition in the 1980s (Higgins, 1991). Non price competition for physicians and patients is inflationary because it contributes to redundant and underutilized services and technology (Luft, 1986; Robinson 1987). Instead of seeing overbuilt hospitals in competitive urban markets in the US going out of business, hospital closures in the 1980s tended to be either rural hospitals or urban hospitals serving a disproportionate share of indigent patients (Hollingsworth and Hollingsworth, 1987). Robinson and Luft (1985) conclude that evidence from the US proves that non price competition in healthcare leads, not to reduced cost and enhanced efficiency, but to excess capacity, duplication of services, increased levels of amenity and higher costs. Higgins sums up the problem _

"In most hospital markets today, competing to attract well-insured patients yields greater financial rewards than efforts to improve efficiency" Higgins (1991) p66.

Price controls/ regulation

In perfectly competitive markets, the manager has no power over price, being compelled to accept the prevailing one, since price is determined by the interaction of all buyers and sellers. However, the NHS internal market is inevitably after many years of central planning, characterised by local monopolies.

> "Although there is probably a high degree of competition for services such as elective surgery, where many patients are prepared to travel, and for other services in densely populated urban areas, there will be considerable monopoly or oligopoly power in some services outside conurbations and for regional and supra regional services." Department of Health 1989e, EL (89) MB/ 171, para 7(i).

Without regulation, pricing would be subject to abuse by monopoly suppliers at least in the short run, (the economist's model of pricing is set out in Appendix A). Even in the long run, financial and other barriers to entry deter new hospitals from setting up in competition with established ones and therefore contestable markets may be difficult to ensure (Ferguson and Posnett, 1990). Consequently, pricing methods (controls) must be designed which prevent the abuse of monopoly power if the internal market is to encourage economic efficiency. Two possible pricing approaches are a central price schedule and a set of pricing rules based on individual provider cost.

- A central price schedule

A central price schedule could be imposed by central government. Contracts would then be negotiated for the volume of cases to be treated in a given period and for the quality or amenity characteristics of care. In the United States, fixed-rate reimbursement has been a feature of the Medicare system since 1983. Although, a fixed-rate payment schedule may be successful in reducing the level of hospital costs, it cannot be used to enhance competition or to reduce the importance of non-price competition. These issues are considered below in a competitive environment and in a monopolistic environment.

Under a central price schedule a competitive provider will have an incentive to minimise the costs of production, but

> "There is no unique 'minimum cost' for providing healthcare services when the intensity and quality of care can vary. Defining any particular reimbursement rate simultaneously defines the quality, intensity or amenity level of the care provided" (Joskow, 1983, 167).

In the unlikely event the schedule reimbursement rate is greater than the average cost of treatment, competition for patients will drive up expenditures on amenities and hospital resource use until any surplus of payment over costs is eroded (all excess profits are transferred to consumers). On the other hand, if the schedule reimbursement rate is less than current costs, as would be appropriate if cost reduction is the aim, then all competing hospitals within a local market will reduce expenditures per case up to the point at which costs are exactly equal to the schedule rate (the level of amenity and resource use are reduced).

A profit-maximising monopoly provider under a schedule reimbursement rate will continue to minimise costs, and will continue to provide the minimum level of amenity consistent with demand. Any surplus of reimbursement over costs will be converted to profit. If the provider is non-profit making, on-the-job rents will apply.

Schedule rates would therefore generate cost savings only for those hospitals where the fixed rate is less than current costs. One possible response would be for hospitals to change the classification of patients into more lucrative treatment categories, a practice known as 'DRG' creep in the USA where it is prevalent (Carter and Ginsberg, 1985). A central price schedule would also be difficult to achieve because of regional and historic cost variations; these can be considerable (CIPFA 1990). More fundamentally, a central price schedule could not be used to encourage economic efficiency in the NHS internal market as prices would not guide purchasers (DHAs and GPFHs) to their most productive use and reward cost effective services. As outlined above, one of the ways in which monopoly rents are captured by monopolists, especially non-profit making ones, is via cost increases. If these become embodied in

schedule rates, then 'average' X-inefficiency is not penalised, thus nullifying one of the main potential benefits of enhanced competition.

- Individual provider cost

An alternative approach is to base contract prices on individual provider cost. Provider cost can be either retrospective or prospective. Under a system of retrospective reimbursement at full cost, a hospital subsequently receives payment in full from purchasers for all reasonable expenditure incurred. Experience in the USA has shown that retrospective reimbursement encourages long lengths of hospital stay, excessive diagnostic testing etc. (Rosko and Broyles 1987, Guterman and Dobson 1986, Sloan et al 1983, Newhouse and Byrne 1988), the studies in this area are summarised in Table C.

Table C: Retrospective versus prospective reimbursement

Authors	Description of study	Effects on length of stay and costs
Rosko and Broyles (1987)	84 hospitals in New Jersey subjected to PPS (prospective payment system) compared concurrently with 76 hospitals in another geographic area. Two PPSs operated one on a per day basis (SHARE system) and one using DRGs	Length of stay relative to retrospective reimbursement : SHARE PPS - no change DRG PPS - 6.5% less Cost per admission relative to retrospective reimbursement: SHARE PPS - 9.6% less DRG PPS - 14.1% less Admissions relative to retrospective reimbursement: SHARE PPS - 8.8% more DRG PPS - 11.7% more
Guterman and Dobson (1986)	Before and after study of Medicare claims data including only hospitals subjected to Medicare PPS (which commenced in 1983)	Length of stay fell by 9% from 1981 to 1984
Sloan et al (1983)	Before and after study of US national cohort hospitals, using 34 hospitals in non PPS states and non-Medicare patients as controls	Post PPS: Length of stay in ICUs constant CAT scanning increased at slower rate Use of non-surgical techniques declined Use of routine tests declined
Newhouse and Byrne (1988)	Before and after study of all Medicare patients including all hospitals so as to control for patient shifting	1981-1984: Length of stay increased by 9% 1981-1985: Length of stay fell in 1985 to just below the 1981 average

Source: Donaldson and Gerard (1991)

A system of payment based on retrospective reimbursement promotes inefficiency and cost escalation, it would also be extremely difficult for purchasers to keep within cash-limited allocations. A system which bases prices on prospective provider cost, on the other hand would provide greater control whilst still enabling purchasers to be guided by price.

It is therefore rationalisable that the NHS Management Executive decided to instruct NHS providers to set prices equal to prospective cost plus a rate of return on capital (NHSME, 1990). Indeed such pricing is in line with the economist's approach to public sector pricing.

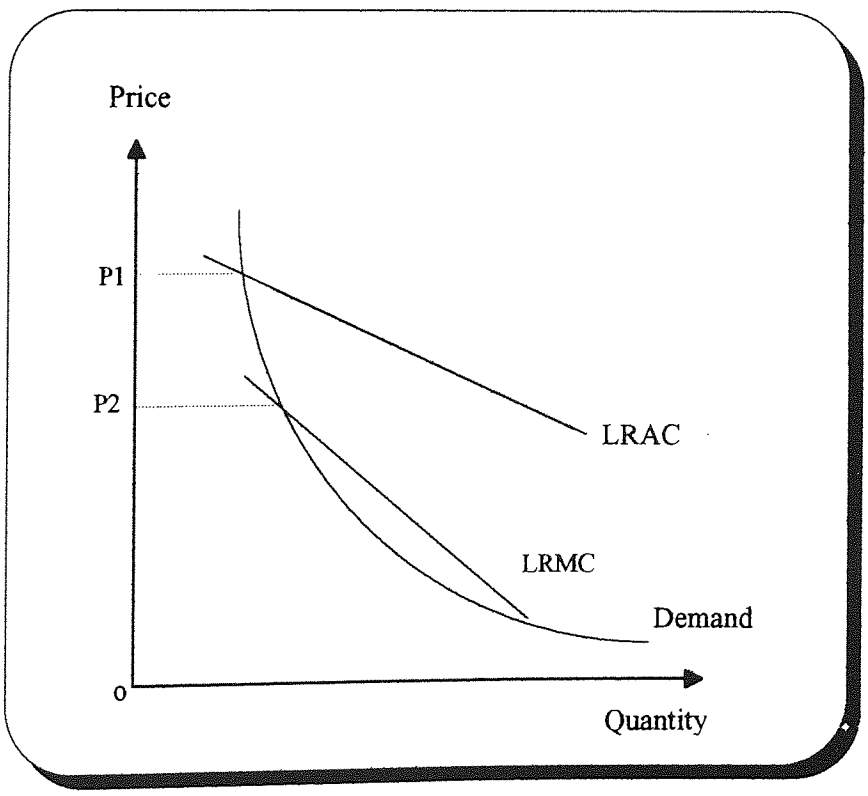
Cost-based pricing - the economist's approach to public sector pricing

If a private sector firm pursues profit maximisation, this has clear implications for the price it will charge (Appendix A). They will be profit maximising prices, not necessarily in the neo classical matching of MC to MR, but in the sense that the firm feels its way by a process of trial and error towards prices that maximise the firm's profit (the competitive process). For a public sector organisation, particularly a monopolistic one, the pursuit of maximum profit is not necessarily an appropriate objective.

After the Second World War, economists argued that nationalised industries should use marginal cost pricing. Their advocacy of marginal cost pricing stemmed from a rather literal interpretation of the Pareto welfare analysis (section 2.2.). However, it became clear that nationalised industries operated in an environment where most firm's prices were not equal to MC and therefore if nationalised industries set prices equal to MC when prices were above in the private sector, this would lead to a misallocation of society's resouces. Recognising this, economists developed the general theory of 'the second best'. In a second best world, where in the private sector price exceeds MC, nationalised industries should emulate the behaviour of private sector firms. Thus if in the private sector, prices exceed MC by 6% then public sector organisations should set their prices on the same basis. In this way a Pareto optimal allocation of resources is still assured even in the second best world.

In theory, MC to the economist is the derivative of the total cost function or the increase in total costs which results from the production of one extra unit of output. However, in the real world there are indivisibilities. For example, for a hospital with empty beds in a ward, the extra cost of another patient is very low. When the beds are full, on the other hand, the MC of another patient is the cost of opening up a new ward. To adhere strictly to MC pricing would result in most purchasers paying very low amounts and one extremely unfortunate purchaser paying a very high price. In addition, in calculating MC some account must be taken of capital costs. The hospital must be able to replace its capital equipment and building stock. A related point is that hospitals are likely to be subject to scale economies (section 3.2) i.e. the long run average cost curve (LRAC) is downward sloping and consequently if average costs are declining, MC must be less than average cost. If the hospital sets price equal to MC and charges a price of P_1 (see Figure 7), losses will result. For the organisation to break even, prices must be set at P_2. The definition of cost includes a normal return on capital and therefore break even using LRAC really means the hospital is making zero super-normal profits.

Figure 7 Marginal or Average Cost Pricing



In line with this reasoning, pricing in the NHS internal market is set to achieve financial targets imposed on hospitals. The financial target is explicit for NHS trusts, a 6% return on the current cost of assets; in directly managed units (DMUs) it is embodied in the pricing rules which require cost-based prices to include capital charges (current cost depreciation plus 6% interest). The NHSME is seeking to imitate the pricing of efficient competition and prevent the abuse of monopoly power.

Openness in costing and pricing

In theory at least, purchasers will be guided by price to the most 'efficient' provider and providers will be encouraged to improve efficiency (as long as markets are contestable, Baumol et al 1982). However, in order to reduce the likelihood that in monopoly situations, cost-plus pricing will encourage cost-enhancing inefficiency, openness in costing and pricing is required. Culyer and Posnett, 1990 see such openness as a method of providing yardsticks to enable purchasers to assess contracts more fully. Yardstick competition is a device used by regulators which enables them to encourage efficiency in monopoly industries (Kay and Vickers, 1990). In the 1980s, NHS performance indicators were developed for a similar purpose. Robinson (1994) argues that with a system of yardstick competition in place, improvements in standards should be achievable through negotiation and mutually agreed action between purchasers and providers.

In the NHS internal market, the existence of monopolies, and difficulties in ensuring contestability, have led the NHS Management Executive to require prices to be determined on a full cost basis with a return on capital. Developing cost methods for prices which reflect comparative efficiency is important if contracts are to encourage improvements in efficiency and drive the market towards a long run equilibrium characterised by productive and allocative efficiency.

3.4 Accounting information for pricing decisions in the NHS internal market

Absorption or full cost pricing

There is general agreement that long run pricing decisions should be based on the recovery of full cost, if the organisation is to remain financially viable. Full (absorption) costs are based on normal volume and a normal mix of facilities. The full cost of a product, (e.g. a specific service, test, procedure, visit, examination, case, discharge etc.), includes the variable costs plus a 'fair' share of all fixed costs. In this respect all fixed-cost models involve some subjectivity in cost attribution and averaging techniques in multi-product organisations - 'fairness' is subject to interpretation and negotiation.

In the USA, Govindarajan and Anthony (1983) reported that 33% of 501 firms surveyed used a cost-plus approach based on total cost. In the UK, Drury et el undertook a survey (Table D) which shows that 'cost' is defined in several different ways when computing cost-plus selling prices, and that total manufacturing cost is prevalent.

Table D:

Product costs used as the basis for cost plus pricing					
Cost Base	Extent of Use				
	Never	Rarely	Sometimes	Often	Always
	(%)	(%)	(%)	(%)	(%)
Variable product cost	13	11	30	20	26
Total manufacturing cost as used for stock valuation	14	11	17	31	27
Total variable cost (including non-manufacturing variable costs)	21	21	24	22	12
Total cost (including fixed non-manufacturing costs)	18	19	12	24	27

Source: Drury (1992)

A variant of full cost (or absorption) pricing is rate of return pricing. Rate of return pricing, as prescribed for the NHS internal market, builds on cost that is 'normalised' for fluctuations in the rate of output and develops a profit mark up that is related to a planned rate of return on capital employed.

Sizer (1989) rationalises the use of full costs in pricing decisions:-

> "Once commitments which entail continuing fixed costs have been entered into, management wants unit costs for pricing decisions which include a provision for recovery of total outlay according to some plan e.g. use of absorption costing with fixed costs included in product cost on basis of normal capacity." p480.

It could also be argued that full cost estimates for pricing purposes are quick and cheap to operate and that such an approach enables pricing to be delegated through simple costing rules (Sizer, 1989). The principles set out by the NHS Management Executive therefore accord with private sector practice i.e. pricing for healthcare contracts should be based on costs; costs should generally be arrived at on a full cost basis (including a 6% real rate of return on capital); and there should be no planned cross subsidisation between contracts (NHSME 1990).

However, full cost pricing and rate of return pricing give no guarantee of cost recovery or required profit, except when demand and competitive conditions are as anticipated when the costs (and mark up) were established. Specific criticisms of full cost pricing are:

- it tends not to take account directly of demand and assumes prices are simply a function of costs. A hospital must be sure it can achieve contracts at the volume of activity built into the full cost prices;
- it fails to reflect competition adequately, the volume of sales achieved will depend on competition, not merely the hospital's own costs;
- it overplays the precision of attributed fixed costs and capital employed in a multi-product business. There is no uniquely appropriate way of allocating fixed costs and capital charges (current cost depreciation and interest) over the numerous services provided in a hospital;
- the attribution of common fixed costs provides only a very crude measure of the opportunity costs of using those resources;
- full cost pricing is a long run concept, but healthcare provision is subject to rapid technological and other changes in treatment patterns and the incidence of illness can also fluctuate markedly;
- if prices are based on full cost, there is a danger that variations in non price variables e.g. waiting lists are incorrectly evaluated.

Marginal Pricing

On the other hand, the marginal cost approach to pricing decisions recognises that decision-making is essentially a process of choosing between competing alternatives, each with its own combination of income and costs; and that the relevant concepts to employ are future incremental costs and revenues and opportunity costs, not full costs which include past (sunk) costs. With marginal pricing the organisation seeks to fix its prices so as to maximise its total contribution to fixed costs and profit. The NHSME has stated that marginal cost contracts will represent only a small part of a provider's activity arising in year from unplanned spare capacity.

> "As prices should be based on full costs and costs should be allocated using assumed service levels, costing services at marginal cost rates will apply only for the pricing of marginal capacity in the short term. Hence such contracts would be tenable only for periods of less than one year. As a general rule one year's marginal capacity would be incorporated into the following year's assumed service level unless there are grounds for believing it would not be taken up by purchasers." NHSME 1990 para 25.

Marginal pricing holds a number of advantages:

- marginal costs more accurately reflect the future, if a hospital takes on (or loses) additional workload, its costs will increase (or decrease) by the marginal costs;
- when demand is highly elastic some of the prices determined by marginal costing would be considered uneconomic (if considered in relation to 'total' cost), but it may well be beneficial to the hospital to price services using a marginal approach;
- marginal costing may be more indicative of potential competitor cost (important in competitive or contestable markets);
- marginal pricing also enables a more aggressive pricing policy.

However, fixed costs are important, at least in the longer term. Total contribution from all products must cover fixed costs. On the other hand, it is not essential that each separate product or market should produce a contribution which is sufficient to cover attributed fixed costs and provide a normal profit, although this is, in effect, what the NHSME's pricing principles require.

The NHSME's principles were introduced to encourage efficiency and prevent the abuse of monopoly power, they are largely in line with what tends to happen in practice as a 'start point' for pricing decisions in the private sector. Baxter and Oxenfeldt's reasoning of the widespread use of cost-based pricing in 1968, seems equally applicable to the reformed NHS-

> "The main attraction of cost plus is, of course, that it offers a means of by which plausible prices can be found with ease and speed, no matter how many products the firm handles. Moreover, its imposing computations look factual and precise, and its prices may well seem more defensible on moral grounds than prices established by other means." p299.

The principles are very broad: hospitals have considerable freedom to choose the product level at which costs should be attributed and to determine appropriate means of cost allocation and apportionment.

3.5 The product level

An essential feature of any market is a clear and unambiguous definition of the product to be traded. Hospital patients exhibit a vast variety of characteristics and therefore it could be argued each patient is unique. However, it would not be possible to contract at an individual patient level on a prospective basis as DHAs have to manage a fixed cash limit allocation for the residents of their locality. Unlike insurance companies DHAs would not be able to raise additional income by increasing premiums, furthermore the administrative costs of such systems would be high.

An important determinant of overall hospital costs, (in addition to the volume of services) is the range of services to be offered. The NHS Management Executive recommended specialty-based, block contracts for the majority of providers in 1991/92. This is largely because of difficulties in obtaining more detailed pricing and monitoring. However, 113 procedures, investigations and out-patient visits were prescribed for pricing GPFH contracts. In the longer term, if the internal market is to achieve efficiencies through the contracting environment, contracts will have to be related to patient volume and the range of treatments within specialties (the case-mix).

Thus a classification of case-mix which condenses the infinite variety of hospital patients into appropriate groups is required. For the operation of sound cost accounting systems, the set of products which constitute the business of each hospital would form the basis of a cost control system and flexible budgeting. Each product would be identified in terms of a treatment plan and set services to be delivered to the patient. For example, a patient over seventeen years old, hospitalised for a tonsillectomy might be expected to consume 6 meals, 2 days of hotel services, 6 hours of nursing care, 20 minutes of surgery etc. Each element would be costed so as to produce in each patient treatment department, an explosion of the hospitals forecasted mix of cases in terms of each case type (product) and their cost. As actual patient load became known, variance analysis would reveal the extent to which costs incurred in each cost centre were above or below expected values. The variances would be due to:

Input prices (personnel, materials)
Volume (number of patients treated)
Case Mix (types of patients treated)
Efficiency (usage of input factors)
Treatment pattern (variations in physician prescription of services)

From the point of view of cost accounting, the crucial test of an appropriate product definition is the ability to define the likely resource consumption of the patient.

- Specialties

Individual clinical specialties cover a wide range of hospital treatments from those undertaken as a day-case with little resource input to those requiring many weeks of hospital stay and high usage of resources. Specialty cases whilst initially having the practical advantage of being relatively easy to cost and therefore price would not enable resource consumption to be clearly defined and would be an unsatisfactory level at which to contract. Contracting on a specialty in-patient day rather than an average specialty case would build in a crude adjustment for case-mix within specialty, the more complex cases generally requiring longer lengths of stay. However, the difficulty of ensuring that lengths of stay are justified would require strong utilisation review and patient management.

- Patient diagnosis groupings

Patient classifications based on diagnosis can be expected to synthesise the patient's symptoms and determine expected treatment. Standardised classifications of diagnoses have been available for many years through the World Health Organisation ICD schemes. Thus the obvious contender at the commencement of the internal market for future products was that of diagnosis related groups (DRGs) developed in the US at the Yale School of Management. Four major criteria were specified in DRG development:

- the groups should be comprehensive and mutually exclusive;
- it should be possible to allocate cases to groups on the basis of routinely collected information;
- the resulting groups should be clinically coherent;
- the groups should be homogeneous in their use of resources.

It was also considered desirable that there should be no more than 500 DRGs to comprehend the entire range of hospital in-patient work. In Britain, the evaluation of DRGs has been in progress since 1982, Sanderson et al (1989). The patients are classified according to one or more of the following variables: principal diagnoses, age, sex and discharge position. Difficulties arise in the use of different diagnostic and operative procedure coding systems in Britain and the US and also the sometimes poor quality of data recording (a problem which the resource management projects have been addressing). The clinical acceptability of DRGs varies widely, both in relation to the DRGs themselves and the clinical specialties. For DRGs which comprise a single diagnosis or procedure there is general clinical understanding and acceptance; in some instances, however, it is difficult for the practising clinician to perceive any rationale to the grouping other than the need to aggregate miscellanea. The current DRGs present particular problems for the specialties of orthopaedic surgery and gynaecology. Whilst DRGs aim to comprise iso-resource categories, in Britain this can be tested only in respect of length of stay, there being no patient-based cost information generally available in the NHS. Unfortunately, consideration of distributions of length of stay show some marked variations in homogeneity. A study of three Regions (Northern,

Yorkshire and Merseyside) using 1985 Hospital Activity Analysis data concluded that only one third of DRGs are homogeneous across the range of acute specialties. There appears greater homogeneity within DRGs for those specialties with a predominantly elective caseload and short average length of stay e.g. ENT surgery, ophthalmology and gynaecology; generally homogeneity is greater amongst surgical than medical specialties with the notable exception of orthopaedic surgery. However, it must be remembered that any grouping by diagnosis cannot explain all variations, clinical practice will also be a factor. In 1990, work had commenced on redefining DRGs for British clinical practice.

The criticisms of the application of DRGs in the US has led to proposed alternatives to, or improvements on, the DRG classifications. Severity of illness is not accommodated within DRGs, but it is felt that inner city and teaching hospitals tend to admit cases which are more severe than average and therefore require correspondingly more resources to treat effectively. Patient Severity Index developed by Horn at the John Hopkins Hospital in the US rated patients on seven variables: stages of principal diagnosis, co-morbidities, complications, dependency, residual response to therapy, rate of response to therapy and non-operating room procedures. However, problems exist in overcoming the subjectivity of the definition of measurement of severity and the costs of collecting the relevant information. The development and application of disease staging as a possible indication of severity has also been put forward. This approach identifies successive stages for over 400 different types of diseases corresponding to a wide range of acute in-patient admissions. The identification of each stage was originally based on specific clinical criteria developed by a panel of medical experts. The distinction of diseases required for staging does not coincide with those found in the DRGs, making it uneasy as a further refinement of DRGs and on its own it is not as good a predictor of resource use as DRGs, Bardsley et al (1989). Further possible variations are the Medical illness Severity Grouping system (MEDISGRPs) and the Acute Physiology and Chronic Health Evaluation (APACHE) system.

- Patient Treatment Groups

Patient grouping for contracts could, alternatively, be based on patient treatment patterns rather than diagnosis, such groupings would be particularly strong from the point of view of internal management control, but would have the disadvantage of not being readily available from existing patient coding and requiring considerable development work. Some hospitals in the US operate such treatment plans and the RM sites have been developing treatment protocols, in 1990, the WMRHA was researching the development of collaborative care plans, such plans could possibly in future be grouped for product lines. Patient treatment plans would fit the cost accounting "industrial" model most closely. Variances could be measured according to the differences from planned treatment. However, whilst treatment profiles have considerable merit from the point of view of cost accounting, the numerous plans will be difficult to form into viable packaging arrangements (product lines).

Quality of services

Product definition and quality of services are inter-linked. Products can be differentiated on grounds of service quality; and the level of product definition also has repercussions in terms of the need for patient management and utilisation review.

Quality of services indicators are difficult to establish in the NHS. The internal market approach requires purchasers' specifications to include quality requirements (DoH 1990). Ideally DHAs as the purchasers of healthcare should be concerned with health outcomes (final outputs), an example of the input/ throughput/ output taxonomy is illustrated in the Table E below.

In 1990, outcome and performance measures concentrated on intermediate outputs as illustrated in Appendix D - Quality Standards, Queen Elizabeth Hospital (Birmingham). The hospital has generic quality standards which cover adherence to statutory standards; medical audit; human resources; and other general standards including patient and purchaser satisfaction surveys.

In addition, service specific quality standards are set out. Re-admissions are the only final output measure included.

Table E:

Input/ Output/ Throughput Taxonomy

Chemotherapy for Cancer	
Inputs	Beds, staff, drugs, laboratory services etc.
Intermediate outputs	Patients treated, number of chemotherapy sessions, survival post treatment, malignancy removed
Final outputs	Normal lifestyle, re-admissions, quality of life, death

Source: Adapted from *Outcome and Performance in Health Care*, Roberts (1990).

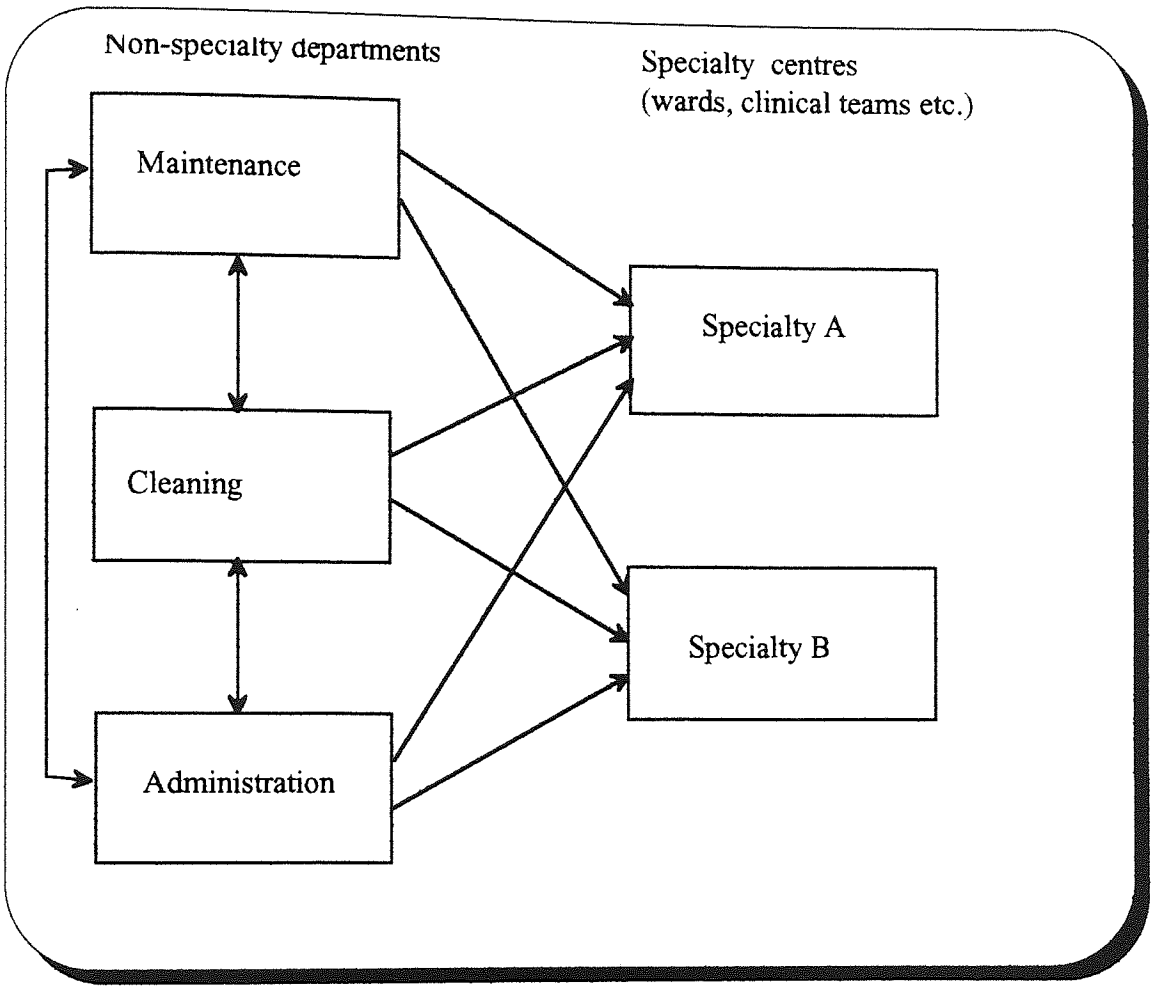
3.6 Cost determination

Having established the appropriate approach to pricing and the products (cost units), there are a number of ways in which the total costs of the products can be determined. Basic prerequisites for cost determination are:

- an up-to-date analysis of the hospital separating, clinical specialties (or other contract categories) and support departments;
- accurate information systems providing-
  financial and cost data for each specialty (contract categories) and support department; and
  statistical data for each specialty (contract categories) and support department;
- an appropriate cost attribution technique.

A simplified model of how services flow between departments within a hospital is shown below, (Figure 8), there are, in reality, numerous support departments and clinical specialties, (a specialty may encompass wards, clinical teams, theatre etc.).

Figure 8: A Simple Conceptual Model for Healthcare Services



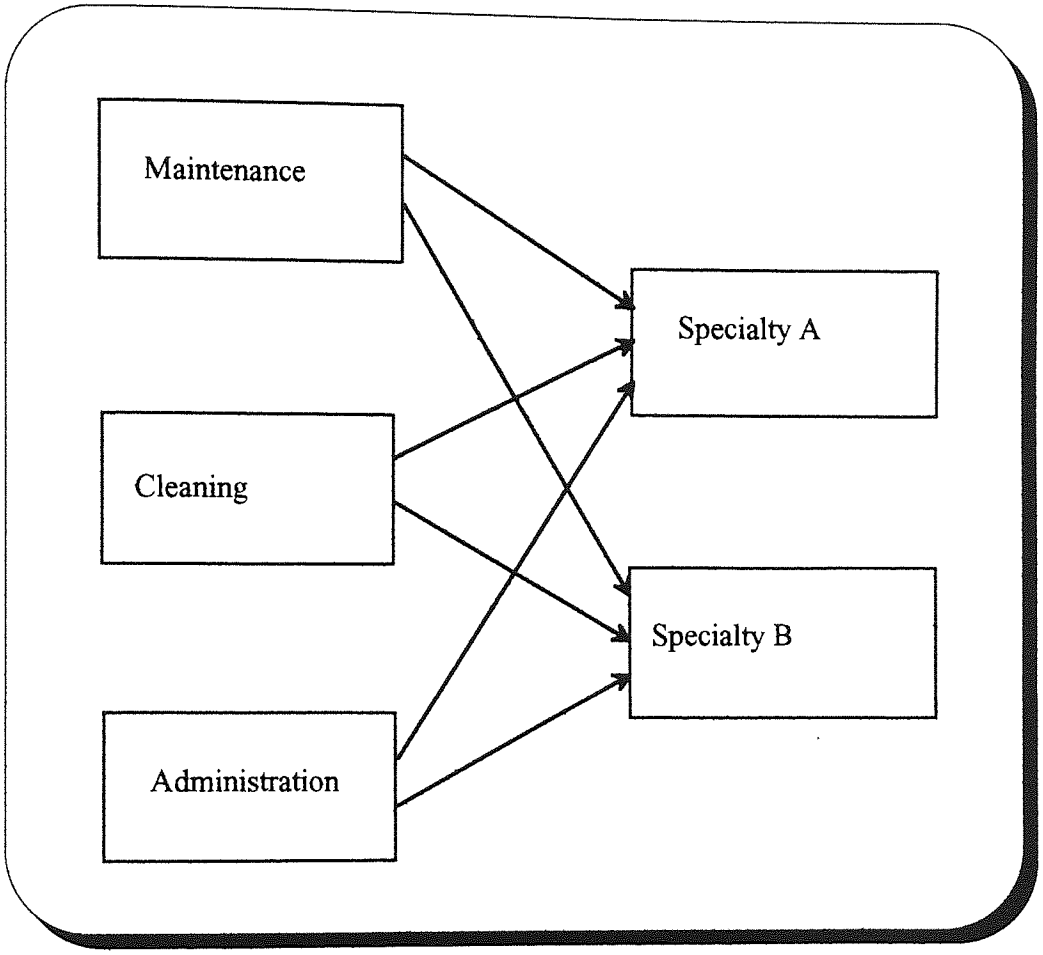
Each of these flows of service could be used as a basis of cost attribution. Each cost attribution method starts with the process of determining costs which are to be attributed. For example, in the US, Medicare and Medicaid specify that certain costs are peripheral to the provision of health services to Medicare and Medicaid beneficiaries and therefore are not authorised for inclusion in attributed costs. Similarly, the NHSME excludes some costs from the contract costing and pricing process e.g. some education and training costs.

Traditional methods

There are basically four methods for cost attribution: direct apportionment; step-down, double distribution; algebraic or reciprocal.

- Direct apportionment

Figure 9: Cost determination - direct apportionment

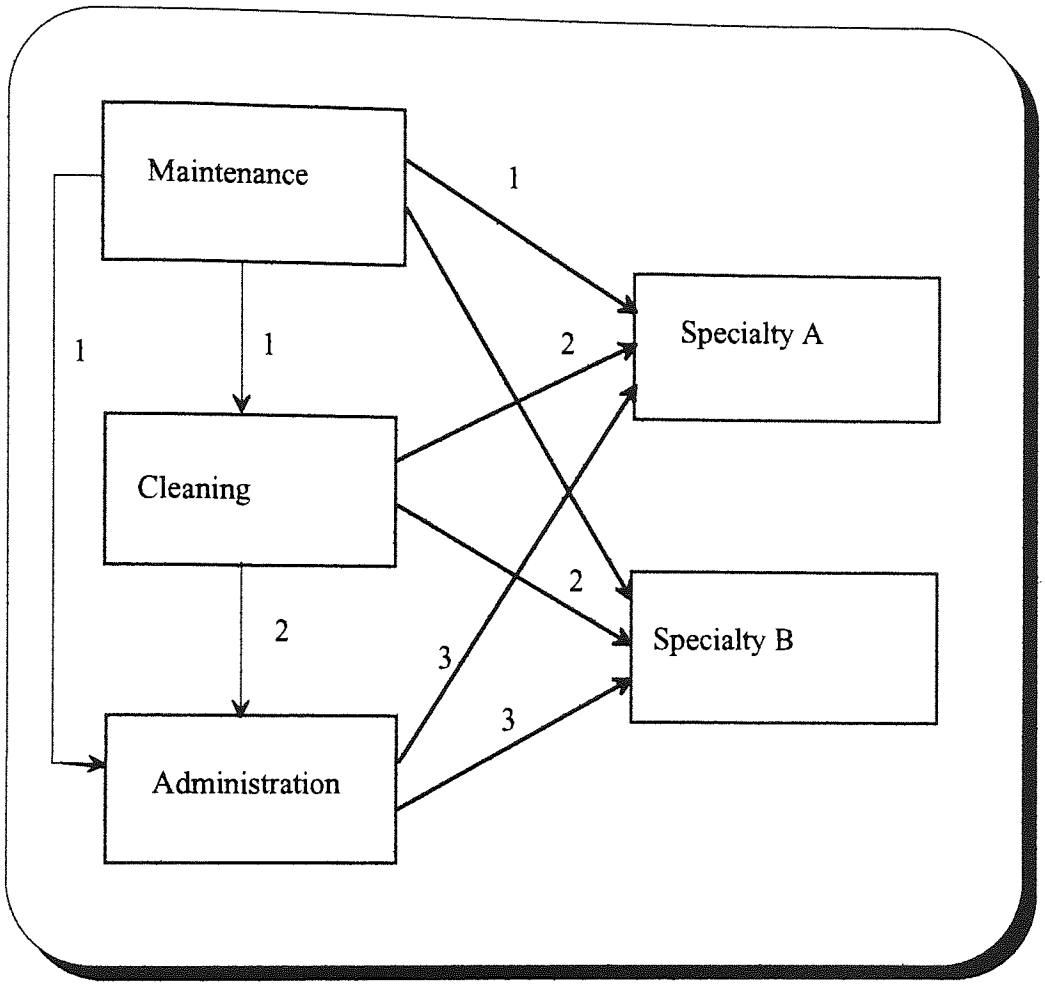


This method ignores the fact that most support departments also provide services to other support departments. it is the least accurate form of cost determination. The Health Care Financing Administration in the US does not permit the use of direct apportionment for cost reporting purposes (Suver et al 1992), but it does permit the other three. The NHSME did not prohibit the direct attribution of all costs to specialties for contract pricing when the costing principles were established in 1990.

- Step-down method

This approach secured its name from the stairstep appearance of the calculation as the costs were attributed to production (clinical specialty) departments. This approach does recognise that support services do provide services to other support departments.

Figure 10: Cost determination - step-down

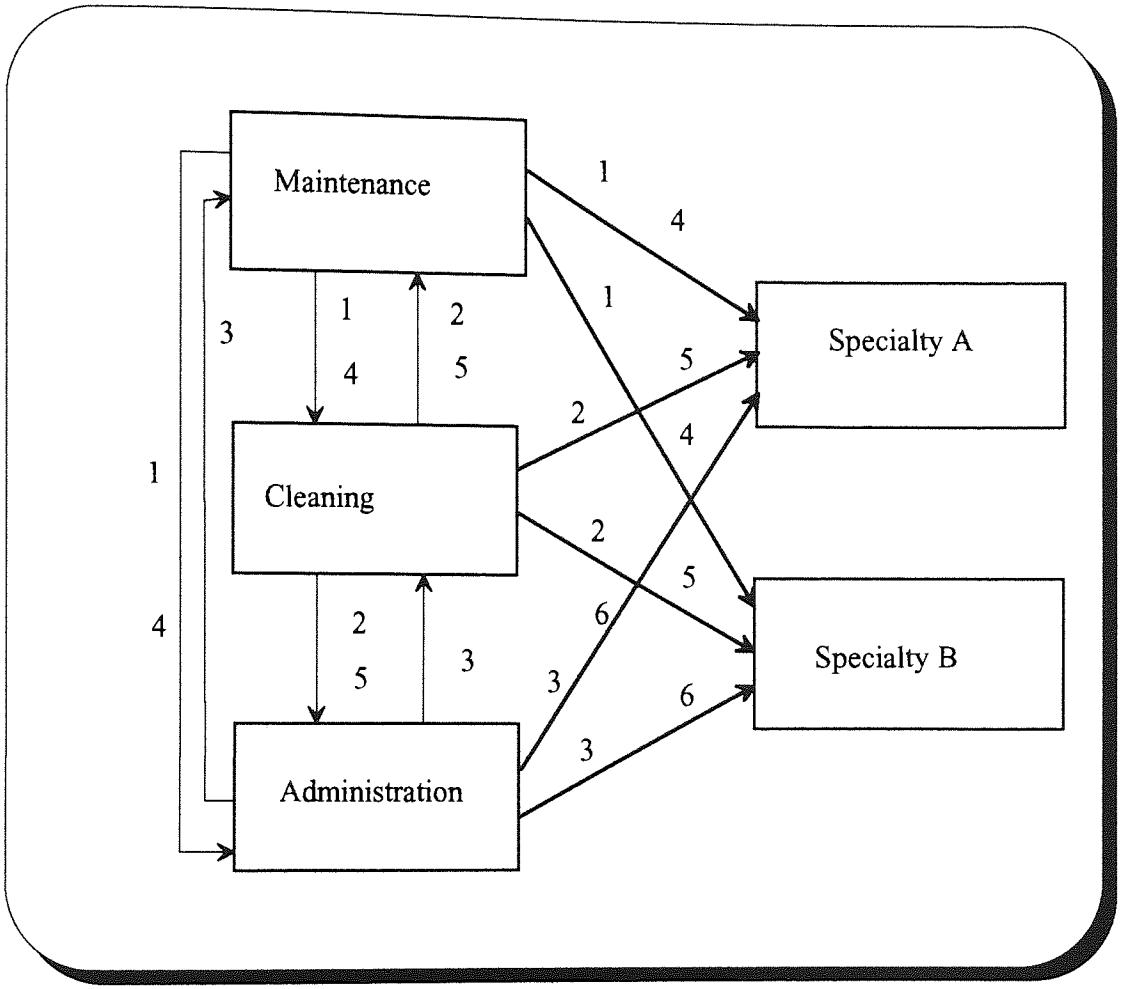


Which department at which to start is subjective, as is the following order. After apportionment, the support department is considered closed; the method does not recognise all interrelationships between support departments. In the US, the Medicare cost reporting forms contain a recommended step-down order and allocation bases (Wise, 1992). The majority of the NHS cost demonstration sites in 1990, outlined in chapter five, used the direct method described above.

- Double or continuous distribution method

The above methods fail to account fully for interdepartmental services. Using double or multiple distribution each support centre remains 'open' and costs can be reapportioned to support centres. The method may use two iterations (double) or the iterations may continue successively (continuous) until further apportionments result in immaterial changes.

Figure 11: Cost determination - double distribution



The final apportionment to specialties is made successively. Each hospitals interpretation is likely to be unique: which departments to exclude; how many iterations; which apportionment bases to be used. This approach more precisely represents the interaction among the various departments i.e. the patterns of actual activities and services, but it is ambiguous as to when to stop reapportioning to support departments and the order of priority.

- The algebraic or reciprocal method

This method uses simultaneous equations to attribute costs most completely. The equations are mathematical representations of the known interrelationships between all departments. The results are more objective than those obtained using the other methods and require no assumptions regarding starting or stopping points. Suver et al (1992) argue that it is the most defensible method for regulatory and negotiation purposes.

Appendix E shows the application of the four differing methods on the simple two specialty, three support services scenario used in the figures. The resultant cost attribution from the differing methods, as in the illustration, may be minimal, and therefore management decisions such as the use of space may create wider variations than different accounting methods. However, Howard (1979) compared the reciprocal method with the step down method for a six month period on a test hospital, the differences in departmental costs varied by as much as 30%.

In the NHS internal market, the direct specialty costs (consisting largely of direct ward costs and clinical teams) are likely to account for less than half of total costs, and therefore different cost attribution methods could provide significant differences, furthermore, even if hospitals adopt the same method, differing apportionment bases, different start points etc. may be adopted. As the contract category (product level) becomes more closely defined e.g. moves below specialty to procedure, the level of indirect costs will increase and increasingly complex systems of cost attribution will be required.

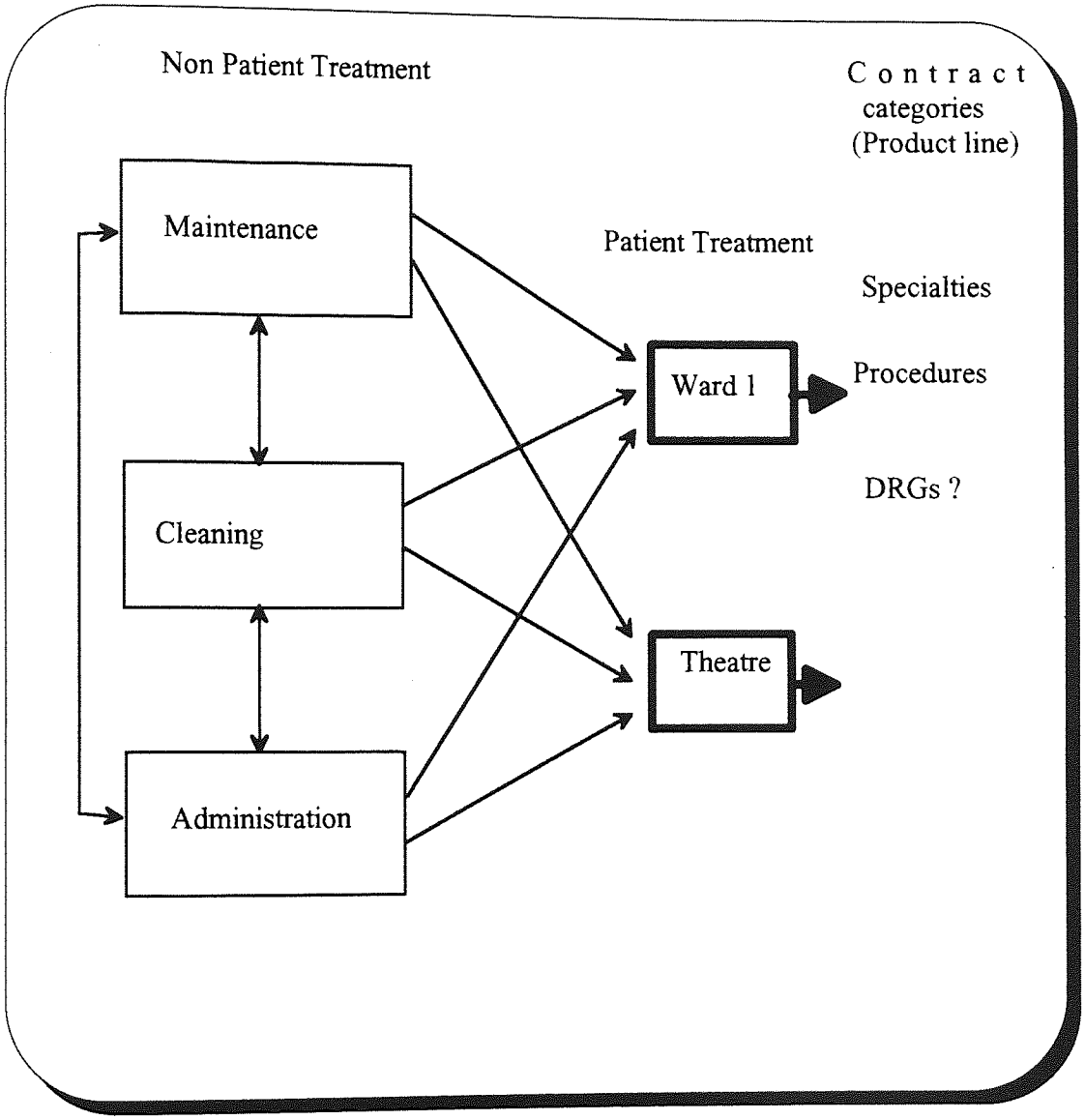
The hospital cost model could move closer to the industrial model whereby the cost of patient treatment departments (production areas) are distinguished from other departments, and the costs of patient groups are determined according to their costs accumulated in the various patient treatment departments. This is similar to the developments at the original resource management sites and some US hospital accounting systems, these are considered in chapter five.

Development of the costing model

In the model shown below, the cost of patient treatment services would include the costs of the indirect service/ overhead departments, these costs would be attributed to patient treatment departments (wards, theatres, out-patient clinics, x-ray etc.) using one of the four methods outlined earlier. The costs of intermediate products e.g. ward cost per day, theatre cost per hour etc. would then be used to compile 'final product' costs. This would bring the simplified hospital model much closer to the industrial model.

Figure 12:

Development of the Costing Model



Activity-based-costing

Activity-based costing (ABC) would require a more sophisticated approach than the simple model and traditional approaches to overhead attribution. ABC is a costing methodology originally developed in a manufacturing context to generate product costs, its advocates argue that -

> "the principles and methods...are applicable to any significant collection of corporate resources in the manufacturing or service sector" p100 Cooper and Kaplan (1988).

ABC involves the identification of the constituent activities (as opposed to departments) which consume organizational resources. These activities are

individually costed and an appropriate measure (known as a cost driver) of the activity's workload is selected to permit the computation of activity cost rates (i.e. total activity cost / total cost driver volume). ABC is based on the premise that activities consume resources and products consume activities. An activity-based costing study in the NHS concluded that:

> "In most departments a single driver or workload measure is not enough if true cost behaviour is to be modelled. Some activities in what are currently known as overhead areas are not related directly to a patient nor can they be deemed to be service costs and so should not be allocated to patient procedures through complex allocation routines via direct care departments. It is felt that ABC will generate more accurate costs for pricing than the traditional approaches." p3 HFMA 1992.

However, the use of more accurate costing methods such as ABC would be justified only where the expected benefits outweigh the expected costs; simple approaches may be 'optimal' when information costs are introduced into the frame.

Target costing

Target costing is widely used by Japanese companies, it is an approach driven by external market factors. A target price is determined by marketing management prior to designing and introducing a new product. This target price is set at a level that will permit the organisation to achieve a desired market share and sales volume. A desired profit margin is then deducted to determine the target maximum allowable product cost. In an industrial setting, product costs are computed based on design specifications and compared with target cost. If the projected product cost is above the target cost, then product designers focus on modifying the design of the product so that it becomes cheaper to produce.

> "Manufacturing engineers also focus on methods of improving efficiency so that the target cost can be achieved over a period roughly of 12 - 24 months. A team of designers, engineers, marketing and production personnel, together with the management accountant, concentrate on producing a product that meets the target cost requirement. The management accountant's role is to produce cost estimates for the various projected product cost designs, measure and monitor product costs once the production process begins. Target costs usually incorporate learning effects over time. This approach

can also be applied to cost-reduction exercises for existing products." (Drury 1992).

This costing technique fits well with the Government's efficiency aims for the NHS internal market. If a hospital's existing treatments are more costly than alternative hospitals, it can examine treatment practices e.g. length of stay, use of day case facilities etc. and thereby reduce X-inefficiency. Similarly, in contestable markets, new entrants will compare their estimated treatment costs with existing providers.

The Government White Paper, (Department of Health 1989a), claimed that the internal market could operate before sophisticated cost systems were in place, but prices must be a reasonable reflection of resource consumption if the market is to facilitate an efficient allocation of NHS resources. Initially, because of the lack of costing systems for elements of healthcare (nursing time, theatre usage, drugs, laboratory tests etc.) and resource profiles for products (treatments), most hospitals will determine costs at specialty level: little standard costing will be used and large elements of cost will be attributed through direct apportionment. In the longer term, a system which builds up the cost elements of healthcare and subsequently the cost of product lines could be developed. This approach would therefore be comparable with the industrial model for establishing product costs.The specialty cost approach with direct apportionment of overhead departments and multi-specialty treatment departments (pathology laboratories, x-ray, theatres etc.) can be implemented relatively quickly and cheaply and enables product costs to be easily reconciled with the total cost of the hospital. On the other hand, it will provide an imprecise measure of resource use which is likely to lack credibility and acceptability to clinicians and other healthcare professions. The extent of the imprecision will depend on the methods adopted for absorbing overheads and attributing direct service department costs to contracts. More sophisticated approaches would provide the most precise measure of cost and be more likely to gain acceptance with clinicians. It would also assist medical audit, the quality review process and the introduction of flexible

budgeting. However the greater the emphasis on the industrial model (and particularly, ABC within the industrial model), the more expensive; and labour intensive it is likely to be to introduce.

3.9 The research hypothesis and research questions

The NHS internal market was introduced to improve the efficiency of healthcare provision. Prices are fundamental to the efficient operation of markets. Due to difficulties in ensuring that the NHS internal market is competitive (or at least contestable), the DoH has specified pricing principles which require cost-based pricing. The principles are rationalisable according to neo-classical economic theory and existing practice in private sector firms. However, their detailed application in the new social policy paradigm of internal markets is untested. The achievement of realistic, comparable prices in the multi-service NHS is a new research area.

In order to ensure comparable prices, the product needs to be clearly defined (clinical specialties cover a number of disparate treatments) and consistent methods of cost attribution used (the full cost can be derived in a number of different ways with varying results). Nevertheless, if the NHS internal market is to achieve its espoused efficiency aims, appropriate pricing mechanisms must be derived. The research hypothesis is:

Cost accounting methods can be developed to enable healthcare contracts to be priced on a cost-basis in a manner which will facilitate the achievement of economic efficiency in the NHS internal market.

The research questions behind the hypothesis are:

- *Can cost-based prices which are reasonable measures of resource consumption be determined for healthcare services?*

  This will require products (or product groupings) to be homogeneous and realistic methods of cost attribution to be used in determining product costs.

- *Can prices be meaningfully compared between alternative providers?*

  This will require the consistency in terms of cost 'products' and the methods of cost attribution.

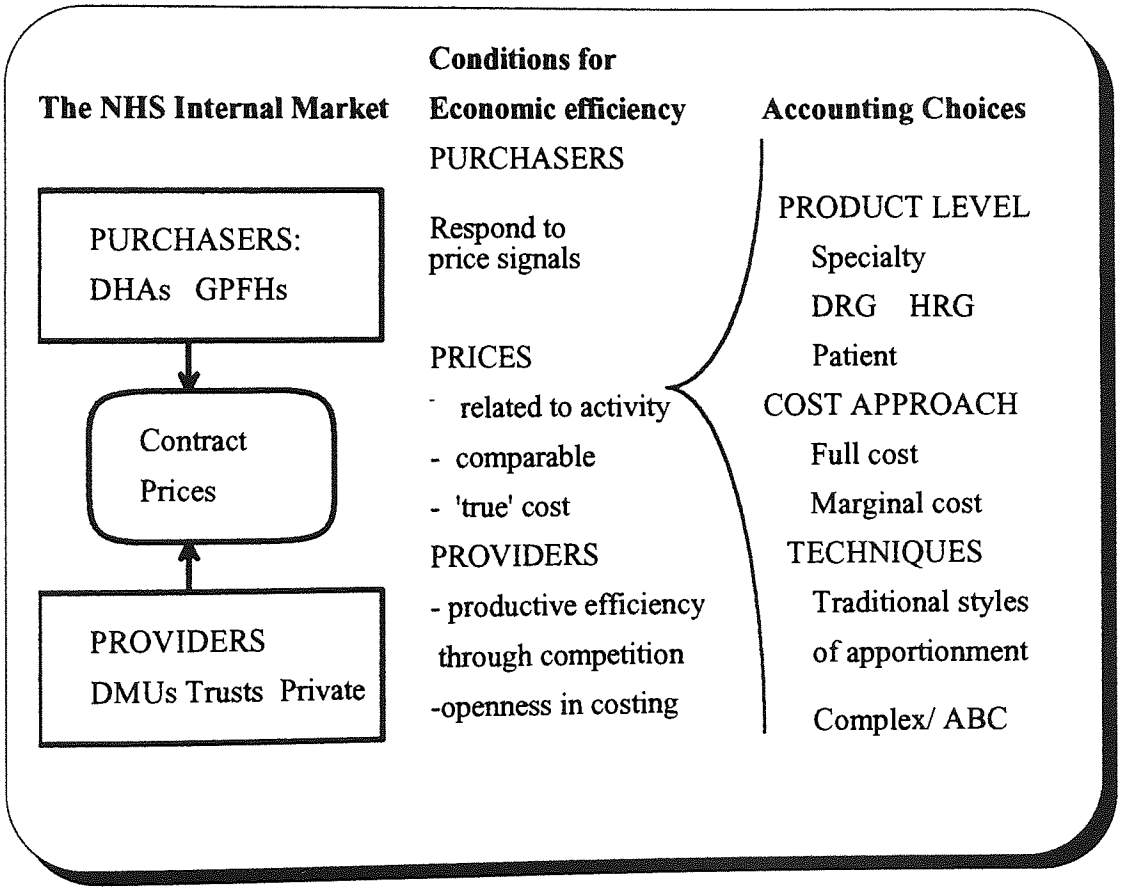
Fundamental to both aspects is that price is a function of quantity. Additionally, in order to facilitate economic efficiency:

- purchasers must respond appropriately to price signals;
- providers must be encouraged to achieve productive efficiency through competition and openness in costing.

These aspects require the market to be appropriately structured and managed, to enable prices to operate as effective signals.

The research issues are set out in Figure 13.

Figure13: The Research Issues



The research methodology for examining these issues is set out in the next chapter.

Chapter Four **RESEARCH METHODOLOGY**

4.1 Introduction

The research hypothesis established in the previous chapter is

> *"Cost accounting methods can be developed to enable healthcare contracts to be priced on a cost-basis in a manner which will facilitate the achievement of economic efficiency in the NHS internal market."*

The use of price signals to distribute resources within the welfare state is a new social policy paradigm, the feasibility of such an approach in healthcare provision was untested at the introduction of the NHS internal market. The NHS reforms have no obvious parallel in healthcare systems abroad, nor significant pilot testing in the UK prior to their introduction on 1 April, 1991. The hypothesis is restricted to the consideration of whether cost-based pricing can provide appropriate signals to facilitate a more efficient use of NHS financial resources; it does not address measurement of the economic efficiency of the NHS internal market since its inception. The research area is restricted to acute services (long term care programmes for the elderly, mentally ill or people with learning disabilities are excluded).

The hypothesis requires two issues to be examined in depth: the development of cost-based prices which are reasonable measures of resource consumption (homogeneous product groupings with realistic methods of cost attribution); and comparable prices of alternative providers (consistency in terms of cost products and methods of cost attribution). Furthermore, in order for the espoused improvements in economic efficiency to be realised, purchasers must act on the price signals; and providers should be encouraged to strive for efficiency through competition and/ or openness in costing.

To investigate the hypothesis, information on cost accounting approaches adopted in compiling contract prices in the NHS internal market had to be collected. In deciding what data to collect and how, a number of alternative research methods were considered. The alternative research methods and the reasoning behind the chosen research strategy are set out below. This is

then followed by a fuller description of the research methodology employed and the data sources used.

4.2 Research Design: Some Choices and Issues

Research design is the overall configuration of a piece of research. As Easterby-Smith et al (1991) puts it

> "what kind of evidence is gathered from where and how such evidence is interpreted in order to provide good answers to the basic research question" p21.

The research designs available depend, in the first instance, on whether the study can be considered to be an experiment or not.

Experiments and quasi experimental research designs

In an experiment, subjects are assigned at random to either an experimental or a control group. In the experimental group, the independent variable (X) is manipulated by the researcher, it is the effect of this variable that is being studied. The dependent variable (Y) measures the response of the manipulation of the independent variable. The majority of empirical financial studies can not be strictly regarded as experiments (Ryan et al, 1992). This study is not an exception to the norm. The research hypothesis cannot be tested through an 'experiment'. The internal market applies to all NHS providers from 1 April 1991; a control group of providers outside the internal market arrangements and not aiming to produce appropriate price signals through cost-based prices could not be established. Furthermore, the issues cannot be measured quantitatively e.g. assessing realistic methods of cost attribution, homogeneous product groupings, and consistency all require a level of subjective judgement. Experimental research design using a control and direct manipulation of independent variable(s) was therefore a non starter.

However, there are a number of research designs which can be employed in quasi-experimental research settings. The classic exposition of this is Campbell and Stanley (1963), where they evaluate a range of designs which make use of multiple measures over time in order to reduce the effects of

control and experimental groups not being fully matched. The main quasi-experimental research designs are: pre-test/post-test designs; interrupted time series designs; correlation designs; and ex post facto designs.

- Pre-test/ post-test research design

The underlying rationale of this approach is that the event or change in independent variable, X, brings about the change in the dependent variable (i.e., $Y_1 ... Y_2$). The simplest pre-test/ post-test design may be represented as:

$$Y_1 \; X \; Y_2$$

In terms of this research hypothesis, such a research design would be too simplistic. Prior to the internal market, resource allocation to providers was through budget distribution within the DHA which directly managed the hospitals in the locality. The DHA previously aimed for local provision whereas in the internal market the DHA aims to ensure the 'best' services for its population, but not necessarily local provision. Thus a pre-test/ post-test research design could not be applied as the policy goals had changed following the introduction of the internal market. It would be extremely difficult to build in controls to ensure that changes in the allocation of NHS resources were due to price signals, still more so the cost accounting methods on which the prices are based. Other phenomena may have occurred between the two measurements (e.g. real increase in NHS financial resources, new hospitals opened, waiting list funds earmarked; patients' charter targets introduced). Alternatively, a history or maturation effect may have occurred. Recognising these difficulties, the hypothesis is restricted to examining appropriate cost-based pricing, only the price 'signal' aspect is examined, the resultant efficiency effects (which would be extremely difficult to isolate) are outside the direct scope of the study.

- Interrupted time series design

This type of design differs from the pre-test/ post test design in that observations are taken on a series of the dependent variables (Y) both previous to and subsequent to the application of the independent variable or

event occurrence (X). In general terms, the interrupted time series can be represented notationally as

$$Y_1 Y_2 \ldots Y_{n-1}\ Y_n\ X\ Y_{n+1} \ldots Y_{n+n}$$

Interrupted time series designs have the advantage in comparison with simple pre-test/ post-test designs that trends in the data may be detected and eliminated as confounding effects upon the dependent variable. However, there is still the problem that some other variable is impacting on the dependent variable (again a history effect may be present). This problem could be alleviated, as with pre-test/ post-test design, by the use of control groups, but the setting of the NHS internal market precludes this remedy.

- Correlation designs

This type of design involves taking observations of two or more variables and measuring the correlation (relationship) between them using either the parametric Pearson Product Moment correlation coefficient or the non parametric Spearman Rank correlation coefficient. The research hypothesis identified in this study cannot be tested by observing variables which can be quantified in either manner.

- Ex post facto designs

Ex post facto designs arise when the variables under study are not under the direct control of the researcher, but have to be chosen after the event of interest has occurred. Using this design, the observations are made ex post and also matched post the event. This approach again cannot be applied to examine cost-based pricing before and after the introduction of the internal market, however, some analysis of how cost-based pricing developed subsequent to the 1993 detailed guidance from the NHS Management Executive on cost-based pricing could be employed.

In developing the hypothesis that cost-based pricing can facilitate the achievement of economic efficiency in the NHS internal market, neither experimental nor even quasi-experimental designs can be adopted in their

unadulterated form. The use of a control group was impossible in this context: there was little cost-based pricing of services in the NHS prior to the Reforms and DHAs aimed to be self-supporting in terms of services provision rather than acquiring 'best value' for their resident population. The conventional use of multiple measures over time was therefore precluded except to the extent that the development of cost-based pricing subsequent to the introduction of the internal market could be monitored. In developing the hypothesis, studies of how cost-based pricing had progressed as the NHS Internal Market had matured would be invaluable, particularly the merit of cost-based pricing prior to and post the introduction of detailed NHSME guidance on costing for contracting.

Sampling

A further design issue is whether to attempt to sample across a large number of organisations or situations or whether to focus on a small number and attempt to investigate them over a period of time. Easterby-Smith et al (1991) claim this is essentially a choice between cross-sectional and longitudinal design. Cross sectional designs generally involve selecting different organisations (or units of the NHS) and investigating how other factors vary across these units. Thus to investigate cost-accounting methods and the resultant contract prices one needs to select a sample of hospitals (trusts/ units) that are known to represent a range of size; complexity, information systems and competitive positions. A key problem is in deciding how large the sample of organisations needs to be in order to be adequately representative. Cross-sectional designs, particularly where they use questionnaires and survey techniques, have the ability to describe economically features of a large number of organizations/ units. Thus surveys could be used to efficiently gather a large volume of data on the development of NHS costing for pricing. However, a major limitation is frequently evident - the inability to explain *why* the relationship exists including difficulty in eliminating all the external factors which could possibly have caused the observed relationship.

Longitudinal research embodies case study research. The focus is on a small number of organisations over long periods of time. Pettigrew (1985) recommends that research should gather data over periods of time significantly longer than the immediate focus and within the broader social, economic and political context. In this way explanations should emerge from examining patterns in the process. This approach can produce significant results from a very small number of cases.

4.3 Case Study Research

Case studies are becoming increasingly popular in accounting research. A case study is a single unit of analysis which offers depth or richness of detail and therefore the possibility of understanding the nature of accounting in practice. This understanding can be in terms of the accounting techniques, procedures, systems etc. which are used and the way in which they are used. Using small samples which enable the accounting process, techniques and results to be studied in depth can greatly assist the development of theory on accounting choices and the achievement of economic efficiency in the NHS Internal Market. Research on cost-based pricing in internal markets in the public sector is at the stage of hypothesis building rather than hypothesis testing. A stage where the case study approach has much to offer in contributing to a body of knowledge (Open University, 1987). Furthermore, it has been argued that case studies have much wider use than merely theory development. Mohr (1982) argues that the case study is better than more commonly accepted designs for some applications, and at least as good for others (partly because of the virtues of the case study and partly because of the limitations of alternatives).

The various uses of case studies rely on quite different theoretical and methodological perspectives. Ryan et al (1992) classify five uses of case study research, these are set out below:

- Descriptive case studies

These case studies describe accounting systems, techniques and procedures currently used in practice. As such they are useful in attempting to determine the gap between accounting theory and practice, it has long been accepted

that the conventional wisdom of management accounting textbooks is not widely used in practice (Ryan et al 1992). In the context of this research study, it is quite possible that there may be differences between NHS guidance/ regulations concerning cost-based pricing and practice. Such a basic purpose is not to be scorned -

> "To arrive at some understanding of what is going on is hard enough, without having also to meet the demand that we anticipate what will happen next" A. Kaplan, 1964, p.351.

- Illustrative case studies

These attempt to illustrate new and possibly innovative practices developed by particular organisations. For example, Kaplan's work in the USA is concerned with documenting innovative practices that seem to work for successful companies. Kaplan (1986) extols the virtues of case studies, researchers need to make contact with the real world of management accounting both to inform and develop their theories and to ensure that their work is relevant to the needs of practitioners. Case studies on NHS cost accounting practice are necessary to develop the scope for cost-based pricing, for example, the role that cost-based pricing can play in contract negotiation.

- Experimental case studies

These case studies are used to examine the difficulties involved in implementing new proposals and to evaluate the benefits which can be derived. The NHSME used case studies to illustrate the feasibility of determining costs for pricing healthcare contracts i.e. the ten cost demonstration sites referred to in the next chapter. Similarly, case studies in NHS cost accounting methods fulfil this role in relation to the detailed 1993 NHSME guidance.

- Exploratory case studies

These case studies explore the reasons for particular accounting practices. They are therefore useful for the generation of hypotheses and theory development. In relation to this study, such case studies would allow development of cost-based pricing theory e.g. the extent to which prices can reflect the comparative cost of resources consumed.

- Explanatory case studies

These case studies are seen as essential to accounting research as they explain the reasons for observed accounting practices (Scapens, 1991). The objective of the research is to generate theories which provide good explanation. Explanatory case studies on NHS cost-based pricing are crucial to understanding the role cost-based prices play in practice in determining resource allocation through the NHS internal market. It is only with this understanding that the future development and regulation of cost-based pricing can be assessed in the context of the market's efficiency aims.

The various uses of case studies are not mutually exclusive and the distinctions are often blurred. It is quite possible to use a case study to both describe and explain current accounting practices and, as Ryan et al (1992) point out, "the distinction between exploration and explanation is rather ambiguous" p 115.

In case study research the decision whether the researcher should remain distanced from, or get involved with, the material that is being researched must be made. The traditional assumption in science is that the researcher must maintain complete independence in order that valid results can be obtained. However, in the social sciences, this stance is harder to attain and it can be turned into a virtue such as in action research (the action research and the researcher are seen as part of the change process itself) or co-operative inquiry (the subjects become partners in the research process).

Thus the value of the case study methodology is that it enables the researcher to capture a degree of detail and develop a greater understanding of practices in a particular context. Unlike quasi experimental methods, case studies rely on "within case" analysis as a means to evaluation of claims on causal processes (George and McKeown 1985, Mohr 1985), case studies could be extremely useful both in forming hypothesis on cost-based pricing in the NHS Internal Market and in hypothesis testing; indeed this is often an iterative process.

4.4 Mixing Methods

The choices of research design discussed above, are not absolute. In a recent review of research methods in behavioural accounting, Brownwell and Trotman (1988) comment that different kinds of research questions should be investigated with different methodologies. Abrahamson (1983) points out that there are good reasons for using several different methods in the same study as it prevents the research becoming method-bound: the strength of almost every measure is flawed in some way or other, and therefore research designs and strategies can be offset by counterbalancing strengths from one to the other. The use of multiple, but independent, measures is known as triangulation. There are four categories: theoretical, data, investigator and methodological triangulation. Triangulation of theories involves borrowing models from one discipline and using these to explain situations in another discipline, for example neural networks have been used to attempt to explain financial performance. Data triangulation refers to research where data is collected over different time frames or from different sources. Triangulation by investigators is where different people collect data on the same situation, and the results are then compared. Todd (1979) advocates methodological triangulation and uses both quantitative and qualitative methods of data collection: triangulation is seen not as an end in itself, but a means of maximising the amount of data collected.

Research design is about organising research activity, including the collection of data, in ways which are most likely to achieve the research aims. There are many potential choices to make and few definitive rules to guide the researcher to make ideal choices for the particular situation. The particular approach adopted in the research study was a combination of survey and case study methods.

4.5 Research methodology employed and data sources used

Following a review of healthcare cost accounting which provided an initial indication of the problems and potential for cost accounting methods in pricing

healthcare, it was decided that two different research methods should be used to examine the use of cost-based pricing and its appropriateness in enabling economic efficiency in the NHS internal market. This would not only maximise the amount of data collected, but allow the advantages of alternative methods to be gained while alleviating some potential flaws incurred when concentrating solely on one method.

Survey approaches enable the cost-based pricing methods used by many hospitals in the NHS to be identified and described economically. By undertaking two surveys: one at the commencement of the Internal Market and a follow-up survey three years later, elements of quasi experimental research design can be drawn upon to provide evidence of how cost-based pricing has progressed as the NHS Internal Market matured. The survey approach facilitates the external validity of the findings on cost-based pricing across the NHS internal market.

However, in order to provide the richness of detail and a fuller understanding of the issues surrounding the costing for pricing process in NHS hospitals, case studies are needed. Mohr in his defence of the case study (Mohr 1985), points out that "external validity (generalisation) can hardly be a legitimate issue until internal validity.....the truth of the statement made about the subjects and events that are actually observed.....is positively settled." Thus the best of both worlds was sought - the generalisability of the research would be enhanced through the survey approach whilst the case studies would improve internal validity and depth of analysis.

The research study therefore used the following data sources:

- Surveys

  Surveys were undertaken to provide a general overview of NHS cost methods used in pricing services both at the beginning of the Internal Market and three years on.

- Case studies

  In depth case studies were undertaken at two hospitals, in order to study the accounting process, techniques and results more fully.

The Surveys

Practical constraints made it impossible to survey all the acute healthcare providers within the NHS. The West Midlands Health Region was chosen as the survey area. The West Midlands Health Region is the largest Region in England serving a population of almost 5.3 million and spending over £2.3 billion on healthcare in 1993/94 (approximately 10% of the NHS in England expressed in terms of either population or cost). It includes the industrial conurbations of Birmingham and the Black Country to the far reaches of Stoke-on-Trent, Shropshire, Herefordshire and Rugby. It has a cross-section of urban and rural areas and a range of acute hospitals from major teaching hospitals to small-town district general hospitals, Table F. A survey covering such a large section of the NHS in England was regarded as having the potential to provide valid, reliable and generalisable information. By covering one entire health region, data collection was also facilitated as some price information was already collated by the Regional Health Authority. The researcher's own extensive contacts in the finance discipline of the health service in this region also enabled good response rates to be achieved on the questionnaire.

Two surveys were undertaken at different stages of the development of cost-based pricing and the internal market:

<u>Initial Survey (First year of the Internal Market)</u>

- A price database covering the average specialty prices and the GPFH procedure prices used by every acute hospital in the West Midlands Health Region (49 hospitals).
- A questionnaire survey sent to each acute hospital in the Region. An 80% response rate was achieved.

<u>Follow-up Survey (Three years into the Market)</u>

- A price database covering the GPFH procedure prices used by every provider of acute services (DMU or trust) in the West Midlands Health Region (25 providers)
- A questionnaire survey sent to each acute provider in the Region. A 60% response rate was achieved.

Table F: Acute Hospitals in the West Midlands Health Region 1991

District Health Authority	Hospital
Bromsgrove and Redditch	Alexandra
	Highfield
Herefordshire	Hereford County
	Hereford General
	The Victoria Eye
Kidderminster and District	Bewdley Road
	Tenbury Wells
Worcester and District	Worcester Royal Infirmary
	Evesham General
Shropshire	Princess Royal
	Robert Jones & Agnes Hunt
	Royal Shrewsbury
	Ear Eye and Throat
Mid Staffordshire	Stafford
	The General Infirmary
North Staffordshire	The Royal Infirmary
	The City General
S.E. Staffordshire	Burton DHC
	Burton General
	Tamworth General
Rugby	St Cross
North Warwickshire	George Elliot
	The Manor
Central Birmingham	Queen Elizabeth
	Birmingham Women's
	Birmingham General
	Birmingham Children's
East Birmingham	East Birmingham
North Birmingham	Good Hope
	Highcroft
South Birmingham	Selly Oak
	Royal Orthopaedic
West Birmingham	Dudley Road
	Birmingham Eye & Skin
Coventry	Walsgrave
	Coventry and Warwick
	Paybody
Dudley	Wordsley
	Corbett
	Russells Hall and Guest
Sandwell	Sandwell DG
Solihull	Solihull
	Marston Green
Walsall	Manor
Wolverhampton	New Cross
	The Royal
	Eye Infirmary
South Warwickshire	Stratford
	Warneford

- *The Price Database*

The price databases included, for each of the acute hospitals in the Region, the prices charged for the 113 GPFH procedures. In 1991 the average specialty prices used for main stream contracts with health authorities and extra-contractual referrals were also included, but this information was not available in 1994. The price database was used as a first step in assessing both the reliability and consistency of the cost-methods. Whilst variations in prices are inevitable and indeed a necessary prerequisite if prices are to guide purchasers to efficient providers, unless vastly different treatment patterns or disparate 'products' are included, prices could be expected to fall within certain parameters. The range of published prices for each contract category, together with the mean, standard deviation and coefficient of variation was calculated.

- *The Questionnaires*

The 1991 questionnaire covered the market environment (the form of healthcare contracts and the number of purchasers), the contract categories used, the approach adopted in costing and pricing contracts and the availability of activity and cost information. In the 1994 questionnaire the questionnaire also covered the application of 1993 NHSME guidance on costing for contracting.

The surveys therefore provided a general view of cost based pricing by acute hospitals in the first year of the NHS internal market and three years on which would assist in investigating the research hypothesis as follows:

<u>Prices</u>

a) The issue of comparability between providers-

- Comparable contract categories
- Consistent cost approaches (full cost)
- Uniform methods of cost determination/ compliance with Guidance

b) The issue of 'true' cost i.e. measures of resource consumption/ efficiency-

- Adequacy of activity and cost information.
- Costs attributed to products in a fair manner

The Market

The issue of how competitive or contestable is the market -

- The number of purchasers
- The form of contracts
- Openness in costing

Case Studies

Having obtained an overview of cost-based pricing in the first year of the market and highlighted particular problems and deficiencies. It was then felt necessary to gain a more detailed picture of the costing and pricing process, and how the process had developed following subsequent guidance from the NHS Management Executive, through the use of case studies. The case studies sought to embody many of the elements set out earlier (descriptive, exploratory etc.), but were primarily an explanatory tool to provide a means by which theories are used to explain observations. Two case study sites were chosen from different geographic environments, with large variations in terms of size and complexity of service provision. Although no two providers could be regarded as typical of the wide variety of acute hospital provision, they were at two ends of the spectrum in many respects, but still reasonably common in the NHS.

The data collection process consisted of three main stages.

- **Stage 1:** June 1993 - August 1993

Introductory interviews with the directors of finance, the contracts managers and directorate accountants. The interviews were semi-structured focusing on the following areas:

1. the methods of cost attribution adopted in the previous year (i.e. for 1993/94 contracts);
2. the prices and their make-up;
3. the planned changes to the costing and pricing process including the perceived effect of the recent NHS Management Executive guidance.
4. the nature of the market, (number of purchasers and relationships) .

Throughout the study, interview data was recorded in note form during the interview and expanded afterwards. Often file data was analysed to provide a more comprehensive view of the situation and enable the information to be set out in a comparable manner.

- **Stage 2:** September 1993 - November 1993

Stage 2 consisted of observing the costing and initial pricing process for the 1994/95 contracts. At one site this was achieved through weekly to fortnightly visits including checkpoint meetings on the progress. At the second site, the visits were monthly, but involved a detailed review of the process by the chief accountant supplemented by copies of reports/ presentations to the business managers.

- **Stage 3:** January 1994 - March 1994

This stage follows the contract negotiation stage. Interviews with the directors of finance and the contracts managers were used to identify:

1. the contract negotiation strategy
2. the scope for movement from the original cost-based prices
3. other determinants of price / the existence of other pricing strategies i.e. not full cost pricing.

The case studies therefore provided a rich picture of costing for healthcare contracting, the depth of detail complements the general overview derived from the surveys and through internal validity strengthens the ability to explain and develop theory in this area.

Chapter five provides a review of cost information available in healthcare prior to the introduction of the NHS internal market. Chapters six and seven encompass the West Midlands surveys undertaken in 1991 and 1994. At the end of chapter six, an analysis of how costing for contracting in the NHS internal market was envisaged to develop is set out. The 1994 survey examined in chapter seven shows only slow progress along the path towards improved price signals despite efforts from the NHSME to prescribe improvements. A fuller understanding of the costing for contracting process and the issues surrounding it is revealed through the case studies portrayed

in chapters eight and nine. The research data is drawn together and used to evaluate and develop the hypothesis in chapter ten. An overview of the thesis and the research conclusions are provided in chapter eleven.

Chapter Five **A REVIEW OF HEALTHCARE COST INFORMATION IN 1990**

5.1 Introduction

This chapter provides a review of healthcare cost information prior to the inception of the NHS internal market. As such, it provides an initial indication of the problems and the potential for cost accounting methods in pricing healthcare. After first considering the nature of healthcare cost behaviour, cost information available throughout the NHS and under specific initiatives is set out. This is followed by an outline of the UK cost demonstration sites established in 1990 for pricing in the internal market. Finally, cost accounting in the USA, where a market approach to healthcare has been adopted, is examined and implications for contracting in the NHS internal market considered.

5.2 Cost behaviour

Hospital cost behaviour is difficult to identify. Each patient stay is unique and hospital costs relate not just to patients but also to empty beds. Figure 14 shows a hypothetical cost profile for an individual case and the turnover interval (the period in- between one patient being discharged and another one being admitted). Thus both the length of patient stay and the turnover interval are important in determining hospital costs aswell as the number and type of patients.

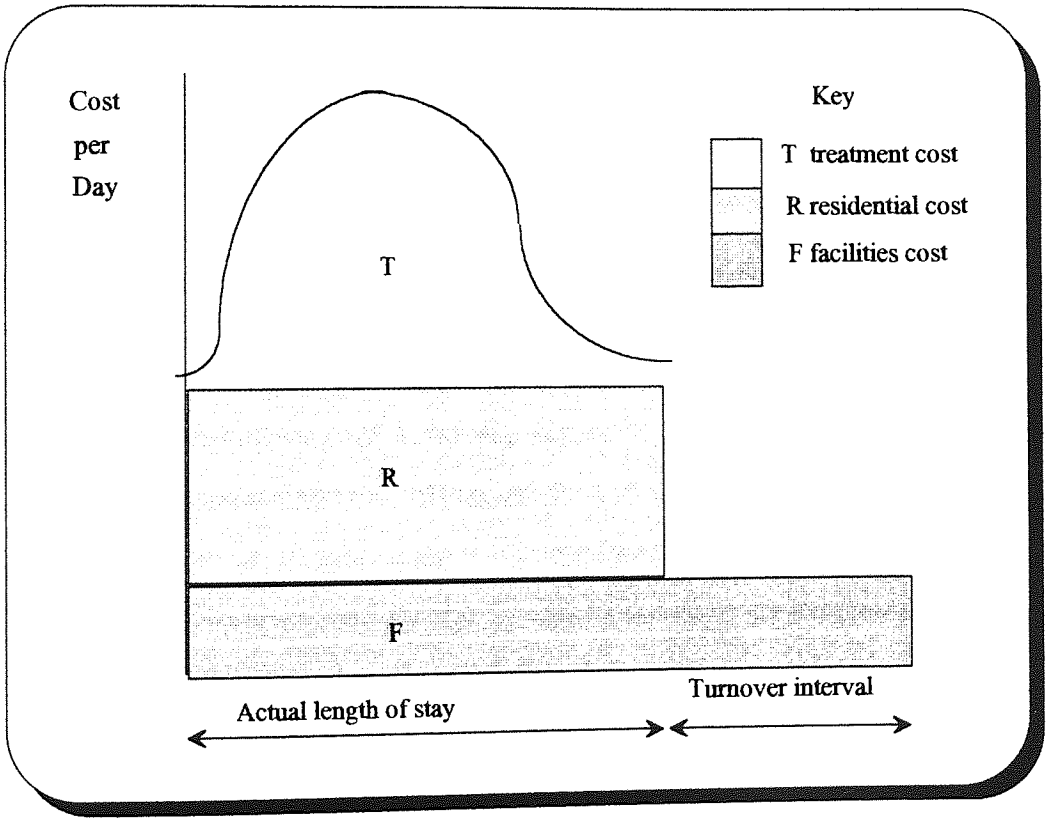
Direct treatment costs will normally be the highest at the beginning of the hospital stay and will fall as time passes. The residential costs will generally be constant over the whole period of stay of the patient. The costs of providing facilities will continue at a uniform rate throughout both the period of stay and the turnover interval whilst the bed remains empty. Parameters T, R, and F are likely to vary between different groups of patients and if economies or diseconomies of scale are present R and F will vary according to the size of the relevant patient care unit within the hospital.

Establishing meaningful patient groups is extremely difficult. The actual shape of the cost profile curve varies between specialties, and, in particular at the

sub-specialty or procedure level. Varying combinations of patients within specialties (the case-mix) can have a major impact on direct costs. Identification of appropriate cost units i.e. patient spells which are homogenous as regards resource inputs and costs, provides a further area of difficulty as discussed earlier in section 3.5. In 1990 there were few hospitals in the UK where the behaviour of costs in relation to activity had been researched and documented, and even fewer that used such information in a financial management system.

Figure 14:

Cost incurred over effective length of patient stay



5.3 NHS cost information before the internal market

The NHS has had budgetary and cost systems since its earliest days, but designed primarily to ensure probity, control total expenditure and provide data to the Department of Health, rather than to facilitate pricing or to assess product cost recovery.

Cost analysis and reporting

- subjective analysis of costs

In the early decades of the NHS, cost analysis was limited to an analysis of actual costs by subjective expenditure categories (medical staff costs, nursing staff costs, drugs, travel expenses etc.).

- functional costs and budgets

In 1974, in line with the change in organizational structures, the analysis of costs shifted to a functional basis i.e. specialised professional services e.g. nursing services, pharmacy services etc. and functional budgets were introduced to help monitor compliance with budget limits by heads of functions. The 1982 NHS Reorganisation created health units below district level and was soon followed by the Griffiths Inquiry, Griffiths (1983), which recommended the appointment of general managers down to unit level, consequently the cost and budget systems were decentralised to unit level. In recent years, the development of more sophisticated costing and budgeting has been supplementary to this functional control at unit level (Perrin, 1988).

- specialty costing

Interest in extending cost analysis down to the level of the clinician (the ultimate decision-maker on the use of NHS resources) was promulgated in the 1970s (Hillman and Nix, 1982). Professor Magee of University College, Cardiff was commissioned by the DHSS to develop an inexpensive system of costing for specialties i.e. determining the average cost of treating patients within clinical specialties (general surgery, paediatrics etc.). The original field trials relied on uncomputerised data from service departments (laboratories, pharmacy, radiology etc.) and sampling was used to form a basis for cost apportionments.

Specialty costs have also been compiled using regression analysis (Ashford and Cumming, 1991). Multiple regression techniques were applied to the data held centrally by the DHSS (hospital costs and bed use data) to determine the statistical average cost of some forty clinical specialties. The specialty costs determined by this technique were used in the 1980s to adjust the financial

allocation targets of regional and district health authorities for flows of patients across administrative boundaries.

However it was not until 1984, that specialty costing as a minimum for all health authorities was recommended, DHSS (1984). Specialty cost returns formed part of annual reporting from 1987, an example specialty cost return (FR12) is included as Appendix F. Specialty costing returns provided by many DHAs were not compiled as part of a continuous specialty costing system: apportionments were frequently based on sample data and were carried out only annually. The specialty costs only applied to "direct patient care services" rather than total hospital costs. Specialty cost returns were the lowest level of cost information which health authorities were required to provide in 1989. The costs were only required to be produced for each DHA rather than each hospital and were not included in performance indicators published by the Department of Health. Nevertheless, there were a number of national and local initiatives providing more detailed information at individual hospitals.

- Regional and Supra-regional Specialties

The funding of regional and supra-regional specialty work has often required the hospitals where such work is undertaken to examine the costs more thoroughly than in statutory specialty costing returns. Regional specialty sites have been required to compile procedure prices for some regional specialty work in the years prior to the Reforms. For example in the West Midlands Region, a procedure profile was required for Bone Marrow Transplantation.

The profile includes:

specific drugs
specific medical and surgical items
theatre usage
in-patient bed days
out-patient clinic attendances
X-ray requests
pathology requests
para-medic contacts
EEG/ ECG requests

The costing method identifies costs into five categories: direct consumables (drugs, theatre etc.); bed day cost per ward (nursing, medical, catering,

laundry, linen, non specific medical supplies); out-patient clinic costs; and other patient treatment services. The method of assigning other patient treatment services is prescribed (e.g. weighted requests for radiology) as is the method of assigning overheads "in order to ensure consistency across sites, and simplicity of application the chosen method allocates overheads on the basis of in-patient days and weighted out-patient attendances." WMRHA Regional Specialty Services, Costing Manual 1988/89.

Resource Management and other initiatives

Impetus was given to clinical management budgets by the Griffiths Inquiry Report, Griffiths (1983), but development work on clinical budgeting had been pioneered earlier by CASPE and local initiatives.

- Management budgeting

In 1983, four demonstration districts for management budgets were set up and two firms of management consultants were appointed to assist in the development. Management budgets were to involve clinicians and relate service and workload objectives to financial and manpower allocations. The aim was to shift the focus of cost accountability from the person responsible for the initial expenditure (head of pathology, pharmacy etc.) to the clinician responsible for their consumption, all service costs and overheads were to be included and standard costing techniques were to be employed.

- Resource Management Initiatives (RMI)

In 1986, RMIs were developed from the former management budgeting exercises DHSS (1986) -

> "to enable the National Health Service to give better service to its patients, by helping clinicians and other managers to make better informed judgements about how the resources they control can be used to maximum effect." DHSS 1986.

RMI is a wider more participative concept than management budgeting. The demonstration sites had failed either due to a lack of commitment from the majority of clinical staff or inadequate computer support, Perrin (1988). To overcome these problems, RMI was to be centred around developing and using information which doctors and nurses themselves think will help them

better to organise and manage their work rather than the mechanics of information and accounting systems. The principal aim is to demonstrate whether the new approach to resource management results in measurable improvements in patient care. Subsidiary objectives include: to identify areas of waste and inefficiency; to benefit clinical group discussion and review; to highlight areas which could most benefit from more resources; to identify and expose health care consequences of given financial consequences and constraints; to understand the comparative costs of future health care options. The information required to support the RMI is known as the "Case-Mix Management" system. The basis of the system is the individual patient record including all events occurring to the patient. Operational data is fed from either a single feeder system (i.e. an integrated system) or from a number of feeder systems, NHS Management Board (1989). The integrated systems are known as Hospital Information Support Systems (HISS). Each event occurring during the patient's episode of treatment is costed using standard costs defined for each hospital. In the years prior to the Reforms, the RMI sites had been developing the use of Diagnostic Related Groups (DRGs) as a means of grouping patients for meaningful analysis. Six RMI sites were established initially: Arrowe Park Hospital, Wirral; Freeman Hospital, Newcastle; Guys Hospital, London; Huddersfield Royal Infirmary; Pilgrim Hospital, Boston; and the Royal Hampshire County Hospital, Winchester. A pen portrait of the RMI pilot schemes is included in Figure 15.

When the NHS reforms were announced, it was widely believed that the six RM pilot sites initiated in 1986 would provide the answer to hospitals' information needs and enable them to generate sufficiently reliable cost information to operate treatment tariffs, and enter into commercial contracts with DHAs, GPFHs or other purchasers. Consequently, further hospitals were chosen as RM "roll out" sites to pilot systems which could be extended to all 260 major acute hospitals in the country.

Figure 15

The RMI Pilot Schemes

ARROWE PARK HOSPITAL is an 860 bed district general hospital with an annual budget of £30m in 1988/89. In late 1988 a decision was taken that Arrowe Park and Clatterbridge Hospital which has a mixture of acute and long stay beds would be managed with Arrowe Park as a single split-site DGH. The pace of development was slow to begin with due to local political problems and disagreements with Mersey RHA over the choice of case-mix system. The case-mix system commenced implementation in October 1990. (Self-Governing Trust from 1/4/91)

FREEMAN HOSPITAL is an 805 bed teaching hospital including a 180 bed regional cardiothoracic centre. It is one of three acute hospitals in a district with a population of 282,000. The hospital has an annual budget of £40m. The hospital was a second generation management budgeting site and had therefore considerable experience in attributing costs. (Self-Governing Trust from 1/4/91)

GUY'S HOSPITAL is a major London teaching hospital with 777 acute beds. As a District General Hospital it provides comprehensive services for its local population. However, its situation next to London Bridge Railway Station and its development of certain specialties to serve regional and supra regional needs lead to its catchment population being much greater than its District population of 320,000; it plays an important role in the provision of tertiary referral services and research. The hospital has a revenue budget of some £59m in 1988/89. (Self-Governing Trust from 1/4/91)

HUDDERSFIELD ROYAL INFIRMARY is a 500 bed hospital providing acute and maternity services. In 1988/89 the hospital had a budget of £22m. In 1985, the Hospital became a second generation Management Budgeting site and in 1986 applied to join the national RM initiative, it was formally accepted in October 1987. In the meantime the Hospital decided to develop a proto-type Clinical Information System with the help of management consultants paid for by the DHSS. The Clinical Information System was piloted with four consultants at the end of 1988 and by the end of 1990 had been extended to 11.

PILGRIM HOSPITAL, Boston is a 675 bed (including psychiatric) general hospital. The unit had a revenue budget of £17m in 1988/89. The Pilgrim Hospital joined the RM Initiative in 1988. It had previously been a pilot site for specialty costing in the Trent Region and a second generation management budgeting site.

However, in 1989, the original RMI sites had much development work to undertake to achieve their objectives (objectives conceived before the major changes outlined in 'Working for Patients'). The Central Consultants and Specialists Committee (CCSC) of the BMA was concerned about the extension of the initiative before their plans to evaluate the site, and in their October 1989 evaluation stated that

> "whilst encouraged by the experience of the experimental sites , the CCSC is not yet convinced that the evidence so far justifies extending RMI to additional sites." CCSC (1989).

Furthermore, the interim report of the Brunel University Evaluation Team pointed out the dearth of financial information and the lack of a consistent approach to its collection -

> "Initially most sites concentrated on the collection of activity data, and not so much on the development of financial systems: this was a conscious decision on their part. However, the sites have been working on methods of costing individual patient episodes. Some have based their approach on the use of standard costs, others are seeking to use a combination of actual and standard costs. There is no overall agreement at present on the approaches to costing..." Buxton et al (1989).

In 1990, a brief review of the RM sites was undertaken to assess their contribution to future costing and pricing of healthcare contracts in the NHS internal market (Ellwood, 1992). As the focus of RM had been in involving doctors and nurses in managing their resources, the greater part of the hospital budgets at the RM hospitals were attributed to clinical directorates. The extent of delegation to clinical directorates varied between RM hospitals: at Guy's Hospital 67% of hospital expenditure was attributed to directorates; at Huddersfield Royal Infirmary all expenditure was attributed to directorates. The RM hospitals had invested heavily in computer systems including case-mix management systems. Indeed all the RM hospitals, except one which had still to incur its main programme of computer implementation, made over £1m investment in information systems between starting RM and the end of 1990. Whilst the hospitals had been experimenting with the use of DRGs, they did not use DRGs or any other form of patient grouping as part of routine management. Care profiles consisting of the expected pattern of care for a given type of patient were also being developed at the RM hospitals.

Figure 16

Costing Methodology - Huddersfield Royal Infirmary

Ward Costs/ Budgets comprise:

•-day nursing staff directly coded and a predetermined share of actual night staff costs for all HRI;
•cost of items ordered by the ward through the supplies system e.g dressings
•patient meal days at standard cost
•laundry pieces at standard cost
•CSSD packs at standard cost
•cleaning (fixed amount from tender)
•estate management (fixed amount as allocated or apportioned)
•nurses in training based on predetermined allocation
•pharmacy issues ie cost of drugs to ward stocks plus overhead
•general hospital overhead apportioned in relation to nursing budget.

Total budget is divided by the budgeted in-patient bed days to arrive at a standard cost per in-patient bed day.

Pathology costs

Individual laboratories have standard costs per test or set of tests based on direct labour and materials for each laboratory. Overhead costs for laboratories (similar to pharmacy) are separately identified and currently charged out under AYMB system at a standard rate per request (to be attached to a test in future).

Radiology costs

Calculated in a similar manner to pathology.

Occupational / Physio/ Speech Therapy

Cost per recorded unit are produced

Theatres

The Theatreman system has recently been introduced which enables high cost items e.g. prostheses to be costed to individual patients plus a standard charge for theatre costs based on theatre time.

Pharmacy

The drug cost is obtained from the pharmacy system and a percentage is added for pharmacy overhead.

Medical staff costs

From AYMB system the actual and budgeted junior medical staff costs by consultant are known. At the end of 1990, the methodology of attaching medical costs to individual patient activity in the RM database had not been decided (other than those already included in theatre, pathology and radiology costs).

Although one of the original aims of RM expressed by the Department of Health and Social Security was to develop case-mix planning and costing, (DHSS 1986), most RM hospitals had been slow to introduce costs into the RM database. Huddersfield Royal Infirmary was regarded as one of the most advanced in 1989 (Ellwood, 1992). The costing methodology of Huddersfield Royal Infirmary is shown in Figure 16. Standard costs were held in the case-mix system for the following events: ward cost per day; pathology test; radiology investigation; therapy recorded unit; drugs; theatre time. None of the RM hospitals had been able to provide budgets based on standard costs and expressed in terms of case-mix activity by consultant/ specialty.

- Local initiatives

In addition to the major changes or initiatives instigated by the DoH which are considered below, a number of further projects had been undertaken locally. For example, the Financial Information Project (FIP) originally based at West Midlands RHA had been developing patient costing using a modular approach (ward nursing; operating theatres etc.). Local district initiatives included the Bradford-Calderdale computer system for compiling annual specialty cost returns and the Medical Activity Resource System (MARS) at Central Birmingham HA for producing reports by clinician. A small number of districts operated computer models to simulate the effect of changing activity levels on hospital costs.

- Departmental costing systems

Many hospitals had developed costing systems as part of a service department's operational system. These costing systems are useful in informing clinicians of their resource usage and encouraging efficient practices, they also enable specialty cost statements to be compiled more accurately. The departmental cost systems can be constructed very simply by using crude workload measures or preferably using relative value units (RVUs) or (engineered) standard costs. For example, a haematology laboratory may use merely the number of requests received for investigations

as the cost object; it may use the Welcan system which weights individual work performed according to the staff time required for each investigation or it may compile the standard cost of each investigation by monitoring the quantity and cost of each resource consumed. Appendix G shows the standard costs for haematology profiles undertaken at the County Hospital, Hereford. Departmental cost systems are only as good as the costs which are fed into them and quite distorted resource use information can be provided if inadequate workload measures are used. For example the cost of a GP fundholder's work using a simple unweighted request as the workload measure would, for the Hereford laboratory, be £9,400, however, if the work is costed according to the type of investigation requested then the cost is only £3,900 - the GP fundholder requests much simpler investigations then the hospital clinicians.

5.4 Cost Demonstration Sites 1990

The cost information available in the NHS had developed rapidly in the years prior to the Reforms, but there was very little information available for costing contracts at a detailed level. The lowest level of analysis for most DHAs in 1990 was the specialty cost information provided in the financial return FR12, this analysis was not based on the total hospital costs and it was undertaken often with dubious precision. In 1990, the Department of Health established ten cost demonstration sites "to apply the cost allocation principles proposed by the Department of Health across the range of contracts envisaged by a provider unit." The ten cost demonstration sites are set out in Figure 17.

All but one of the demonstration sites envisaged costing the majority of their contracts on a specialty basis, however, many expressed their future commitment to a procedure costing system. Harefield Hospital adopted procedure costing for contracts. Harefield Hospital is the main cardiothoracic centre for the population of NW Thames Region and has many regional and supra regional specialties. The hospital already had experience of basic case mix management and had achieved a case mix cost by calculating the variable element of all "material" procedures plus daily charges. The product

definition chosen by the sites and the form of contracting envisaged is summarised in Figure 17 .

Figure 17

Cost Demonstration Sites Product Definition and Form of Contracts	
Site	**Product definition and form of contract**
Barnet HA	Average specialty cost. Block contracts with indicative targets
Bradford HA (Acute)	Average specialty costing (future work on banded procedures/ DRGs/ treatments.) Average specialty costing (future work on banded procedures/ DRGs/ treatments.)
Calderdale HA	Specialty cost. Majority block contracts in early years. Cost and volume for orthopaedic services (limited cost per case for marketed services within orthopaedics).
Cambridge HA	Average specialty cost, but also costed most common procedures within each specialty using detailed theatre and ward costs. Mainly cost and volume.
Central Birmingham HA	Average specialty cost built up from consultant specific I/P bed day costs. Procedure costing for GPFHs using the same approach. Block for for host HA. Cost and volume or cost per case for other HAs and Regional specialties.
Harefield Hospital	Procedure costing (similar procedures grouped for contracting but not DRGs) Cost and volume contracts, block for thoracic medicine.
Preston HA	Average specialty cost. Non-emergency ECRs based on procedure costs charged in a similar manner to private patients. Block contracts
Scunthorpe HA	Average specialty cost, but also developing a procedure costing system Block contracts for most services.
SE Staffordshire HA	Average specialty cost. Block contracts, cost per case for regional specialties.
West Dorset HA (DGH)	Average specialty cost, a similar top down approach to be used for procedure costs. Block contracts with cost and volume clauses for 1990/91 moving to cost and volume thereafter.
Source: Main Reports of Cost Demonstration Sites	

The pilot sites established the total cost to be recovered from a variety of sources: four started from budget data whilst the remainder worked from historic costs. The sites starting the exercise from historic costs generally started from FR12 data i.e. existing specialty costs for direct treatment

services, but the remainder either started from basic general ledger data or FR11 departmental cost data (Ellwood, 1992). Starting from the FR12 largely pre-empts the use of departmental overhead absorption, thus whilst obviously quicker and simpler to use, this approach is likely to be less satisfactory in measuring the resource use of the specialties. Whilst historic data enables relatively easy reconciliation of prices with costs which is necessary for audit purposes, the costs must be uplifted, adjusted for any non recurring items and developments and any budget under/overspends.

All the pilot sites, except Harefield, costed specialties with apportioned hospital indirect and overhead costs, though costing for a small number of procedures was undertaken at some sites. Harefield used a procedure cost approach whereby 20% of the hospital's expenditure was related directly to procedure cost centres and the rest were identified to variable or fixed pools for each specialty and then absorbed into procedures (or grouped procedures), thus some bottom-up costing was undertaken for direct treatment costs (e.g. theatres) whilst indirect expenditure was allocated and apportioned to specialties for absorption into procedures. The top down cost mapping employed by the sites varied considerably. Some pilots e.g. Scunthorpe, used a staged approach i.e. determining full departmental/ subjective expenditure head cost and attributing to facilities, community or external contracts and then attributing each facility or service cost to specialties. Others appear to have apportioned individual cost heads directly to specialties on whatever basis was appropriate and available.

Cost behaviour was not examined rigorously by the sites though some sites analysed elements of cost into fixed and variable categories. A mixture of definitions were used and analysis was generally very limited, some stated no work to date. The NHSME formally concluded from the work of the cost demonstration sites that-

> "average specialty costs can be calculated prospectively on a full cost basis for contract pricing purposes using existing information systems" NHSME (1990).

However, the fact that hospitals are able to arrive at a full specialty cost is not really the issue, indeed such costs could have been achieved very

simplistically by a percentage addition to the FR12 cost returns, the difficulty is in using these costs for prices in an internal market. They are unlikely to provide appropriate signals to guide purchasers: inadequate product definition; poor workload measures and inconsistent treatment of overheads will impede valid comparisons between hospitals.

5.5 Hospital cost accounting in the USA

Hospital cost accounting methods

Given the comparatively strong market approach to healthcare provision and purchasing in the USA, it would appear reasonable to expect US hospitals to employ cost systems which clearly establish the cost of healthcare "products". In 1990, some hospitals in the USA had cost accounting systems which employ a standard costing approach integrated into an overall resource management context. Industrial model systems are not the norm, but their incidence is increasing (HFMA Massachusetts1991, Counte and Glandon 1988), or as advanced as their literature suggests (Orloff et al 1990). In 1989, a survey of 89 Masachusetts' hospitals found that only 29 hospitals (30%) had computerised costing systems and that 10 of these hospitals reported not currently using the systems (HFMA Massachusetts, 1989). A much larger survey of 3,000 acute care hospitals, carried out be Price Waterhouse in 1985, found 1,533 had some type of computerised cost accounting system, but hospitals with fewer than 100 beds were not included. Most hospitals impute patient costs from patient charges, the ratio of costs to charges (RCC) method. The Massachusetts survey found that 61% of acute hospitals used the RCC method to determine costs by DRG.

The RCC method calculates for each charge centre e.g. X-ray; the ratio of the total cost to the total charges; a consistent relationship between total charges and total costs is then assumed for all the work of the department. For example, if the RCC for the X-ray department is 70%, this would be applied to charges for individual X-rays to deduce the cost of each type of X-ray. Such costings are highly inaccurate, there is often no relationship between costs and charges (Schimmel et.al, 1987; Mc Fadden, 1990), a point which has also been noted with regard to private hospitals in the UK. RCCs result from the

Medicare cost report process, in compiling these, hospitals will have aimed to maximise reimbursement rather than focus on accurately attributing costs, those hospitals that were most adept at maximising reimbursement through rate setting will tend to have particularly distorted cost information.

On the other hand, there are some isolated examples of cost accounting systems operating along business principles and integrated with the resource management approach such as at the New England Medical Centre (NEMC) in Boston (Ellwood 1992). The NEMC have developed and maintained a sophisticated cost accounting system throughout the 1980s and subsequently introduced the system into many other hospitals in the USA. The costing model shown in Figure 18 uses business principles commonly applied in industry e.g. responsibility centres, marginal costing, standard costing, variance analysis and sales forecasting.

Figure 18

The Costing Model - New England Medical Center

Hospital Production Function	Raw Goods Labour, supplies capital	Intermediate Products Nursing, lab tests, X-rays	End Products DRG ICD-9-CM Surgery procedures	Product Lines HMO/ PPO Specialty services
Type/ Level Management	Departmental		Clinical	Finance/ planning/ marketing
Managerial objectives	Manage the cost of raw goods and services	Manage the unit cost of intermediate products	Manage the utilization of intermediate products	Market existing products to markets Market new products to existing markets Improve bottom line.

The focus is on the control and management of costs of intermediate products, this embodies identification of fixed and variable costs within each department; definition of intermediate products for subsequent costing; development of standard unit costs, indirect cost allocation/ apportionment;

variance analysis and department cost simulation. NEMC is able to use the costings of intermediate products together with defined treatment protocols to establish budgets. The treatment protocols delineate the appropriate range in number and mix of services necessary for providing care to a very specifically defined (homogeneous) type of patient. Comparison of actual and budgeted resource use can therefore enable meaningful variance analysis. Although standards are used for all patient level details, therapy departments are often based on relative value units or included in indirect overhead. The "80/20" rule is often applied: each service item is ranked by budgeted $ volume; the 20% of the service items that are expected to account for 80% of the $ volume receive the majority of the costing attention; the remaining 80% of service items representing 20% of the $ volume, are costed in a less time-consuming manner. Furthermore, the costs held on patient records are uplifted by 20 to 25% to cover general overheads. No significant benefit is perceived to justify the development of complicated methods for attributing remote overheads to patients. NEMC sees its cost accounting system as increasingly important in ensuring the negotiation of viable contracts with Health Maintenance Organisations (HMOs) and Preferred Provider Organisations (PPOs) and also in assessing the true return on work undertaken under Medicare DRG reimbursement.

Wise (1992), emphasises that there are marked differences between the purpose of cost accounting in the USA and in the NHS internal market. In the UK, the prices are to be based on cost for contracting purposes. If costs are "incorrect", contracting decisions are made on an erroneous basis and providers achieve unplanned under/ over-recovery of costs. In the USA, the role of cost accounting is to compare costs with reimbursement rates (charges or for Medicare patients, a fixed price per DRG). If costs are "incorrect" management information on product profitability is misleading. As pointed out in section 3.3, in the USA competition in healthcare is usually non price competition as the consumer is generally insured and is therefore not the paying the hospital directly. Consequently, the consumer has little incentive to make cost-efficient choices. However, cost sharing arrangements have been

extended in recent years and the HMOs and PPOs have taken an increasing share of traditional insurance and fee for service market.

Health Maintenance Organisations and selective contracting

Health Maintenance Organisations have grown dramatically over the last twenty years, in 1970 there were fewer than 30 serving just under 3 million people, by 1988 there were over 700 catering for over 29 million people, Stoline and Weiner (1988). A typical HMO operates through patients paying a set annual fee, usually through their employer. In return the HMO contracts to provide all the necessary healthcare. Healthcare may be delivered through a staff model HMO such as Kaiser Permanente in which doctors are employed directly on a salaried basis; or a group model HMO in which a large group practice provides care; or with a number of practices (a network model) or with a number of solo practitioners or small groups.

Preferred Provider Organisations are insurance plans which offer more choice between doctors than the HMO model but not complete freedom as under traditional indemnity schemes. PPOs negotiate fee for service discounts with specified doctors and hospitals in return for an anticipated volume of work, thus enabling lower premiums to enrolees. PPOs have expanded rapidly since 1983 and now cover as many enrolees as HMOs.

The Kaiser Permanente is the largest HMO. It receives monies to provide healthcare to its members which is usually provided through its own directly managed hospitals, but it also places contracts with "outside" hospitals for the care of some of its members. Thus there appears an obvious similarity to the position of DHAs on the introduction of the Internal Market, responsible for purchasing care for their population and providing care through their own directly managed NHS hospitals. The Kaiser Foundation Hospitals provide the hospital services required by health plan members and medicare recipients. The nature of the service provision is loosely defined in hospital service agreements. Although, the Kaiser organisation provides most of the health care requirements of its members internally, contracts are placed with outside hospitals under two circumstances. Firstly, some procedures are very

specialist and it would be uneconomic or infeasible for Kaiser Hospitals to provide appropriate care e.g bone marrow transplants. Secondly, there may be a lack of capacity in some locations, this is particularly the case in the San Diego area where the population is expanding rapidly.

When contracts are placed for very specialist procedures, the content and cost is clearly broken down in the contract e.g transplants would be broken down into 3 stages prior to transfer to Kaiser direct provision: evaluation; surgery; follow-up care. For each stage the resources and cost would be clearly set out as shown in Appendix G for liver transplants.

Where there is a lack of capacity in Kaiser hospitals, beds or operating theatre time etc. a contract may be placed with an outside hospital sometimes through a tender system. These contracts are often placed on a per diem basis and therefore an outside utilization programme employing public health nurses and physician advisors is necessary. Staff are located on site, they review charts and issue notice of noncoverage if appropriate. Discharge planning, transfers to follow up care, bill processing, quality assurance services and repatriation of members to the Kaiser system are facilitated by the review staff.

5.6 Conclusions

The cost information available in the NHS had developed rapidly in the years prior to the Reforms. However, there was still very little information available at the level required for costing and pricing healthcare contracts especially cost and volume and cost per case work. Standard costing was rare and still in its infancy. In 1990, the lowest level of cost information generally available to hospitals was the FR12 specialty cost return which included only direct patient care costs. The cost demonstration sites had largely derived full-cost specialty prices. However, such cost-based prices were unlikely to provide appropriate signals to guide purchasers: inadequate product definition; poor workload measures and inconsistent treatment of overheads will impede valid comparisons between hospitals. The resource management sites and the cost methods adopted at some US hospitals indicate potential approaches for

achieving meaningful cost-based prices. Further lessons from the USA are that in the NHS internal market, contracts for expensive, high technology medicine provided by outside hospitals will require very detailed specification and pricing. It is extremely difficult to ensure quality and efficiency through contract specification alone. Purchasers may require utilization management and audit programmes to supplement contracts.

The methods actually adopted by NHS hospitals in the first year of the NHS internal market are considered in the next chapter.

Chapter Six

THE 1991/92 WEST MIDLANDS SURVEY OF COST-BASED PRICES

6.1 Introduction

This Chapter considers the prices used for contracts in 1991/92 and the cost methods on which they were based. A database of prices quoted by acute hospitals in the West Midlands Region, (the largest of the fourteen health regions in England), was compiled. In order to assess the basis of the prices, a questionnaire on the costing methods used was distributed to acute hospitals in the Region. The questionnaire also included questions on the market environment, the form of contracts, information systems and contract categories (i.e. product groupings). The researcher's view of how the market and cost-based pricing would develop is set out and conclusions are drawn as to the reliability of 1991/92 pricing methods as a means of allocating health service resources in an internal market.

6.2 The contract pricing arrangements for 1991/92

In order to achieve "a smooth takeoff" of the internal market, the operation of the market was strongly controlled in 1991/92. The basic principles for pricing were set by the NHSME.

> "Provider units will need to price their services so that the income recovered matches the net costs incurred. There are three fundamental principles underlying the way in which service costs and prices are to be established:
>
> a. prices should be based on costs;
> b. costs should generally be arrived at on a full cost basis;
> c. there should be no planned cross-subsidisation between contracts.
>
> .....The guidance permits a large degree of discretion to units in the detailed methods they adopt for cost allocation, and apportionment, but the methods should in all cases conform to these principles." NHSME (1990a) para 2.

The NHSME claimed that an initial solution would be to set prices on an average specialty cost basis using the Korner costs and activity returns. Although contracts would be negotiated mainly at specialty level for DHAs, each hospital had to produce prices at clinical procedure level for GPFHs as 113 hospital procedures were to be included in GPFH budgets. The GPFH procedure level contracts were regarded as requiring extra precision.

> "One way of determining costs might be for providers to use average specialty costs as a starting point and to adjust for significant differences between procedures in operating time, consumables and length of stay. Procedures with similar resource use could then be banded." NHSME (1990a) para 30.

The internal market was severely restricted in its first year of operation.

> "For 1991-92 there is a strong presumption in favour of block contracts for major patient flows" NHSME (1990b)

The NHSME went on to explain in a later document that dramatic changes in activity would be likely to disrupt patient services, so that service specification in 1991/92 will need to describe activity based on the current pattern of services, except where planned changes have been agreed with providers (NHSME 1991). The first year's contracting was largely about developing the mechanics of the contracting system. The contracts were to be largely block contracts at specialty level and, for DHAs, were to reflect existing referral patterns. The market was not to be able to respond to price and quantity signals. However, if the benefits of a market approach are to be fully realised through a more efficient allocation of the limited NHS resources such impediments would have to be removed in later years.

6.3 1991/92 Prices in the West Midlands

A database of GPFH procedure prices (Appendix I) and ECR (extra-contractual referral) prices throughout the West Midlands Region was compiled. Hospitals were instructed that ECR prices should be constructed on the same basis as main stream contracts, and therefore ECR prices should be indicative of contract prices.

The database revealed vast variations in the specialty prices as shown in Table G . Depending on which hospital in the Region is selected, a consultant episode can cost from £350 to £1353 in obstetrics and from £469 to £3417 in dermatology and so on. For the internal market to operate satisfactorily price differentials between NHS providers must be indicative of efficiency and/ or quality. However, the choice of clinical specialty as the cost product is bound to give rise to distortions due to differences in case-mix or complexity between hospitals. Specialty costs are generally believed to be at too high a level of aggregation of clinical work to be meaningful as resource groups. Product

groupings are discussed in section 3.5. The US and many European and Scandinavian countries prefer to use diagnostic related groups (DRGs), as indeed has the NHS in its resource management approach, to classify patients into types that are similar both clinically and in the resources they use.

Table G: Specialty Prices 1991/92 - West Midlands Acute Hospitals

Specialty	Price per consultant episode			Coefficient of Variation
	Average £	High £	Low £	%
General Medicine	1160	1472	923	14
Paediatrics	767	1139	371	27
Dermatology	1830	3417	469	59
General Surgery	1148	1477	713	16
Urology	985	1714	595	30
Orthopaedics	1493	2311	854	23
ENT	754	1203	457	27
Ophthalmology	934	1483	518	27
Gynaecology	635	915	443	22
Obstetrics	761	1353	350	36

It was therefore expected that less variation would be found in procedure costs which are broadly in line with DRGs. However, the variation in prices of many procedures between hospitals as measured by the coefficient of variation is greater than the variation between specialty prices per episode, the analysis of selected general surgery procedures is shown in Table H, (the prices for all GPFH procedures are summarised in Appendix I). The prices quoted by NHS hospitals in the West Midlands were generally below those for fixed price surgery in private hospitals. For example, BUPA quoted a price of £1,097 and £1,895 for varicose veins (unilateral and bilateral respectively); this compared to an average of £544 in NHS hospitals in the West Midlands with a range of £287 to £1,278; the fixed prices for BUPA hospitals and another type of private hospital are given in Appendix J. The fundamental question is whether these prices are adequate for the market mechanism to operate effectively. Does the 1991/92 price for treatment of an ingrowing

toenail at one West Midlands hospital of £91 compared with £656 at another provide the right signals to the market?

Table H:

GPFH General Surgery Procedure Prices 1991/92 (West Midlands)

Procedure	Price per consultant episode			Range £	CV %
	Average £	High £	Low £		
Partial thyroidectomy	1079	1732	709	1023	23
Total thyroidectomy	1284	2602	709	1893	36
Aberrant thyroid gland	945	1920	231	1689	36
Salivery gland	714	958	176	782	26
Parathyroid gland	1087	1819	425	1394	25
Oesophagoscopy	370	1057	91	966	58
Dilation of Oesophagus	592	3829	175	3654	117
Operation of oesophagus	1623	3079	175	2904	62
Gastractomy	2882	6531	958	5573	40
Vagotomy	1584	3504	775	2729	38
Endoscopy	359	1106	91	1015	67
Laparoscopy	370	577	188	389	28
Small intestine lesion	1567	3261	869	2392	32
Part colectomy	2510	3668	958	2710	26
Total colectomy	2722	4968	958	4010	27
Sigmoidoscopy	568	1121	91	1030	56
Colonoscopy	448	958	136	822	52
Ext. of bowel	2399	5474	527	4947	44
Prolapsed rectum	1780	2897	922	1975	31
Anal fissure	554	1007	91	916	43
Rectum excision	2899	5503	958	4545	32
Pilonidal sinus	785	2128	459	1669	45
Dilation of anal sphincter	320	958	91	867	56
Haemorroidectomy	782	1276	213	1063	29
Gall bladder	1408	2536	638	1898	32
Bile ducts	2193	3794	958	2836	29
Mastectomy	1382	2464	637	1827	33
Breast lesion	497	1277	231	1046	44
Inguinal hernia	671	1795	303	1492	43
Femoral hernia	778	1719	351	1368	40
Incisional hernia	1295	2433	175	2258	37
Varicose veins	544	1278	287	991	38
Ingrowing toenail	236	656	91	565	44
Skin biopsy	363	1165	91	1074	64
Lymph node excision	518	958	213	745	35

Extract from Appendix I.

In the internal market, the price mechanism is to replace the previous resource allocation system which provided global budgets to hospitals. Price variations are an important facet of a market system, the market will only improve resource allocation if prices fairly reflect costs, such price variations in procedures could be due to the crude nature of the costing approaches rather than true variations in treatment patterns and the cost of resource inputs. At first glance, the pricing structures used were sometimes crude. For example, one eminent hospital used only two prices for the ninety-one GPFH procedures which it provided, £958 and £303. This hospital had the highest price in the Region for nineteen procedures and the lowest price for eleven procedures. In order to assess the reliability of the prices in more depth, the questionnaire sent to acute hospitals in the West Midlands covered the approach to costing contracts/ ECRs and GPFH procedures.

6.4 The questionnaire survey

The questionnaire (Appendix K) contained sixteen main questions, the questions asked for factual data concerning the types of contracts, the number of purchasers, how the costs were compiled for pricing purposes and the activity information systems. Two 'opinion' questions were included regarding factors likely to have led to abnormal costs and the hospital's future costing and pricing strategy (questions 15 and 16). Following discussions with staff at the Regional Health Authority and piloting of the questionnaire at one hospital, the questionnaire was sent to the accountants responsible for 'costing for contracting' at 49 acute hospitals in the Region (Table F in the previous chapter). Replies were received from 36 hospitals, a response rate of 74%.

The hospitals which responded ranged from small community and eye hospitals with budgets under £5m to large teaching hospitals with budgets over £50m (Figure 19a). The total expenditure of hospitals in the survey was £853m in 1991. Although 10 (27%) of hospitals had budgets below £10m (Figure 19b) these small hospitals accounted for only 6% of expenditure (Figure 19c).

Figure 19a: The expenditure of the hospitals in the survey

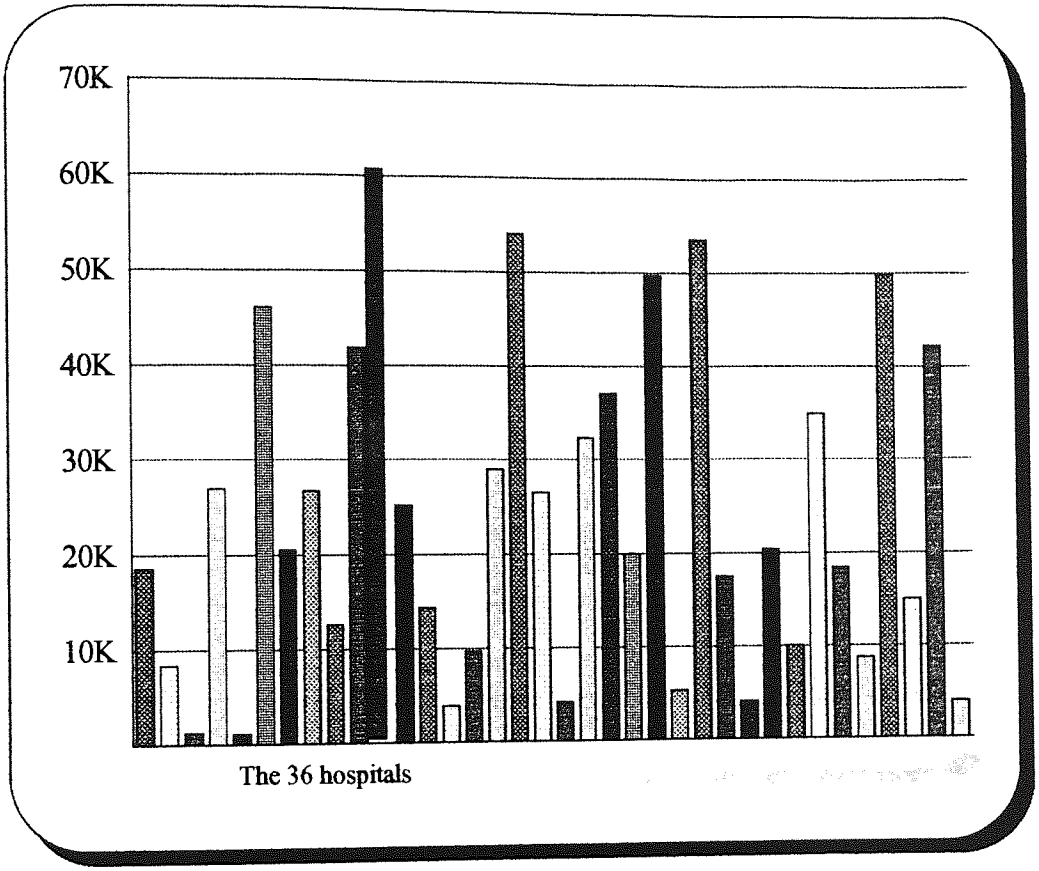


Figure 19b: Hospitals in the survey analysed by size £

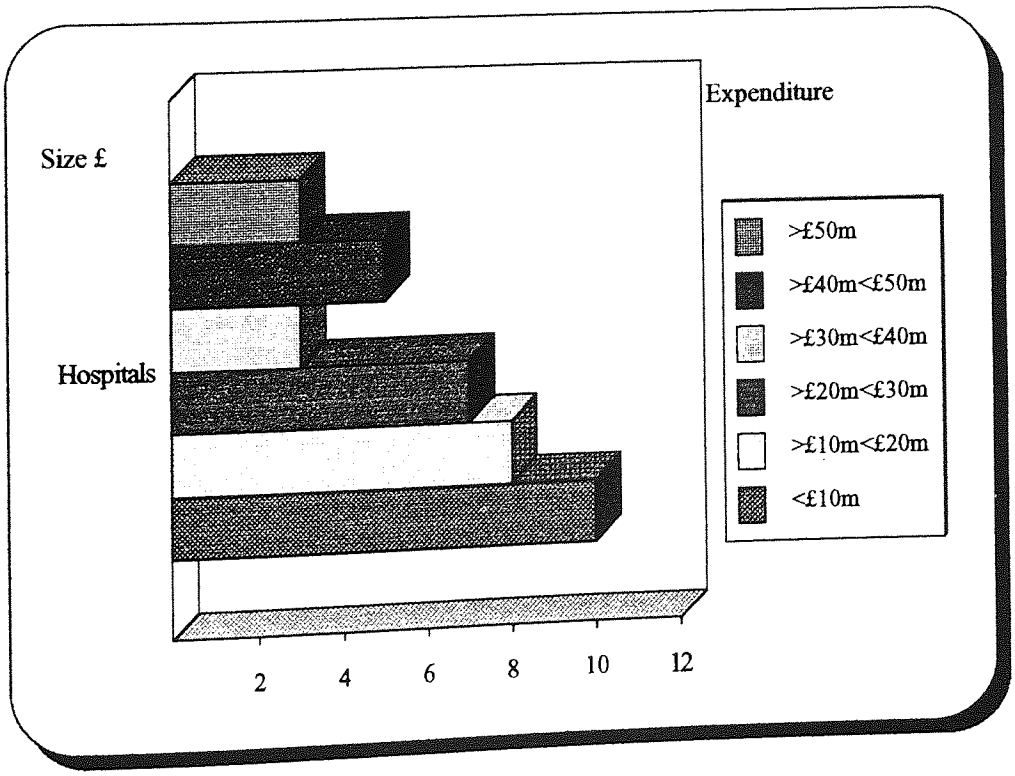
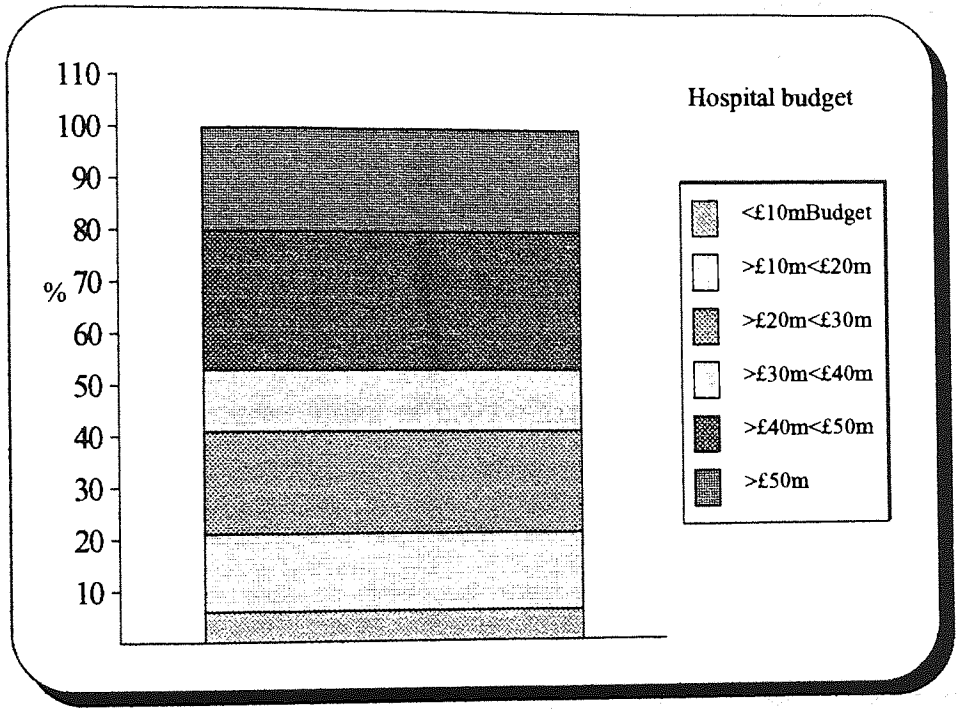


Figure 19c: Total service expenditure by hospital size



The Market in the West Midlands

The questionnaire results showed the nature of the market to be very diverse. Of the 36 hospitals completing the questionnaire the contracting environment varied from one hospital with contracts with only 2 health authorities (Princess Royal in Shropshire) to one holding contracts with 23 health authorities (Queen Elizabeth, Birmingham). The Birmingham hospitals faced considerably more competition than the other hospitals, 7 of the 8 hospitals which contracted with 15 or more DHAs were within the City. Similarly, the number of contracts with GPFHs varied from nil to 16 at Birmingham Women's Hospital. The average provider hospital contracted with 10 health authorities and 2 GPFHs. However, a third of hospitals contracted with six or fewer DHAs and could be regarded as experiencing monopsony power.

A research study by the National Association of Health Authorities and Trusts (NAHAT) monitoring the degree of competition in general surgery faced by hospitals in the West Midlands Region suggested that in 1988 only a quarter of them operated in markets where the degree of competition was such that

elements of monopoly or oligopoly power may exist, Robinson (1991). The NAHAT study employed the Hirschman- Herfindahl index, the approach is explained below. In the United States, the Department of Justice uses the index to assess anti-trust cases, the index ranges from 0 - perfect competition, to 10,000 - total monopoly, firms with values in excess of 1,800 are considered to be in potentially monopolistic positions (Melnick and Zwanziger 1988). The NAHAT study constructed the index for 39 West Midlands acute hospitals using patient flow data for one particular specialty, general surgery. This involved three main stages: identification of each hospital's market area, identification of each hospital's competitors within each market area; and production of an overall index of competition for each hospital, based upon the number of competitors in its market area(s) and their market shares. Applying the Department of Justice's cut off point, to the West Midlands hospitals suggests that in 1991, a third were in monopoly positions, if attention is focused on the number of patients treated by these hospitals, rather than simply the hospitals themselves, the degree of concentration becomes somewhat higher (Appleby et al 1994).

Consequently, it appears that for acute health care in the West Midlands Health Region a significant level of monopsony and monopoly power exists. Contestable market proponents would argue that it is potential competitors rather than merely existing competitors that ensure that existing 'firms' operate efficiently, but in hospital provision, significant barriers to new entrants exist (Robinson 1990). The transaction costs line of argument, because (contracts are expensive to write, complicated to execute and difficult to enforce), suggests the desirability of long term stable contractual relationships between purchasers and providers.

The form of the contracts held also showed extreme diversity. The average provider hospital had the pattern of contract income shown in Table I. However, 7 hospitals earned 100% of their contract income through block (with and without indicative volume) contracts whilst at the other extreme, one hospital earned 95% of its contract income through cost and volume contracts

and 5% of income through cost per case; and another hospital 100% through cost and volume contracts.

Table I

1991/92 Contract income by type of contract

TYPE OF CONTRACT	% OF CONTRACT INCOME
Block	30
Block with indicative volume	58
Cost and volume	9
Cost per case	3
TOTAL (survey respondents)	100

Block contracts which are specified in terms of facilities to be provided are similar to previous NHS management practice. Under a block contract, a provider is paid an annual sum in instalments in return for access for the purchaser's resident population to a defined range of services (DoH 1989c). Block contracts specify resources in terms of beds or doctors, linked to particular specialties. Such contracts are low risk for the provider as the DHA provides resources in regular instalments, irrespective of the volume of patients treated, and for which no explicit usage is prescribed. However, there is little incentive to improve efficiency, indeed, the efficiency trap remains, - reports of hospitals running out of funds and taking only emergency patients were still common at the end of the first year of the NHS internal market. The purchaser has little control, crucial decisions about the volume and nature of outputs to be produced stay on the provider side.

Cost and volume contracts place an explicit requirement on the provider in terms of patients treated. Often a fixed price is paid up to a volume threshold above which a price per case is set up to a volume ceiling. Such contracts are more risky for the provider (though obviously more satisfactory from the purchaser perspective). Cost per case contracts are obviously the most risky, the provider would have no assurity of income, whilst the purchaser would risk losing control of its expenditure if it were to incur large commitments on a per case basis. It is fundamental to the efficiency of market price mechanisms that

quantity of provision is considered in relation to price. Consequently if incentives to technical efficiency are to be provided, contracting must move away from block contracts to contracts which clearly relate price to quantity of output.

In order to investigate the financial vulnerability of hospitals in the first year of the market, the hospitals were asked to categorise their income into three elements:

- fixed (block contracts and the floor level of cost and volume contracts);
- variable (cost per case contracts - ECRs, private patients); and
- non patient care (special funds for training etc.).

In 1991/92, only 2 hospitals had more than 5% of their income classified as variable. However, given the fixed nature of most hospital costs even small percentage falls in funding can have dramatic effects, 12 hospitals classified between 2 and 4% of their income as variable.

The position of hospitals in the internal market in the West Midlands is diverse, it poses much more of a threat/ opportunity to some hospitals than others and consequently the importance of realistic pricing and costing methods is much greater to the more market orientated hospitals.

6.5 The Cost Methods behind the Prices

In costing and pricing contracts for health authorities, all 36 hospitals used a specialty cost approach although GPFH contracts and regional specialty contracts were priced at a more detailed level. Most hospitals (22 or 61%) used the annual financial return FR12 specialty costs (see Appendix F) as the start point, a further 4 used actual financial ledger costs fed into the in-house Medical Activity Resource System (MARS) and 11 used budget information.

The classification of costs by expenditure type by the 36 hospitals surveyed is shown in Table J. However, considerable variation was apparent: one hospital classified only 43% of its costs as direct patient treatment whilst another classified 68% as direct patient treatment; capital charges varied from as little as 4% to over 20% of total costs!

Table J:

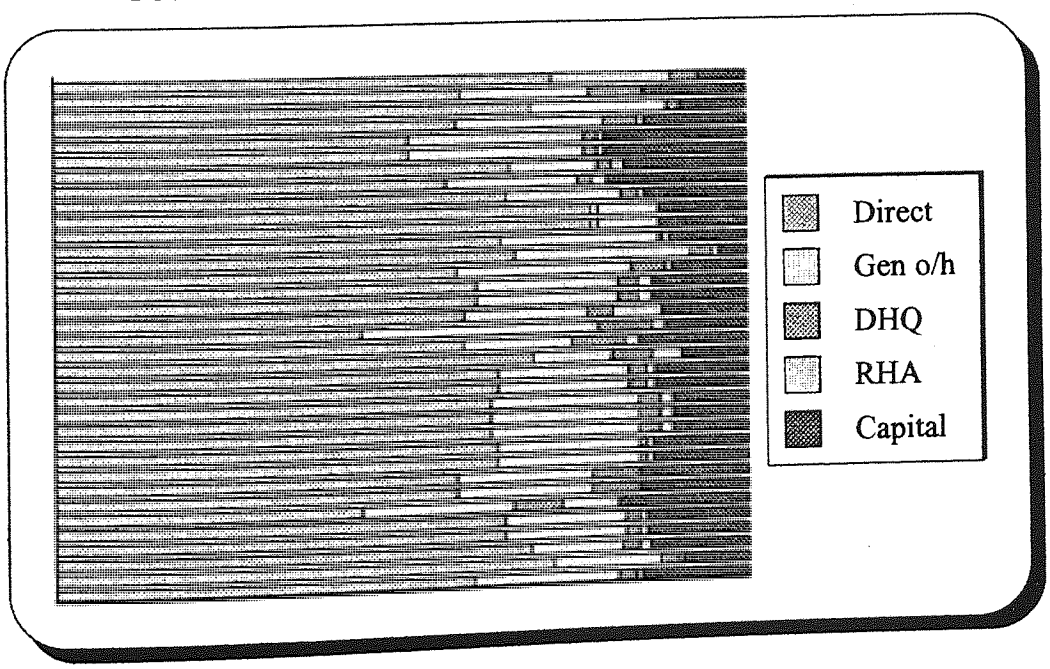
Classification by expenditure type - West Midlands Acute Hospitals

Cost classification of the average hospital	%
Direct patient treatment	61
General services	20
DHQ	3
RHA	2
Capital	14

The ranges of expenditure classification are given in Figure 20. Some extreme variations were checked, For example, the hospital with very low capital charges leased the hospital buildings - the accountant pointed out that the capital charges for the hospital buildings were lower than those for a portacabin at a nearby hospital, although this is strictly correct according to the NHS capital charges system, the capital charge bears little relation to the opportunity cost of using the hospital buildings.

Figure 20:

Cost classification - survey hospitals 1991



Note: the first three hospitals did not differentiate between RHA and DHQ expenditure

The variation due to differing interpretation of the categories should be small as the categories are defined for the Annual Accounting Statements.

Capital charges

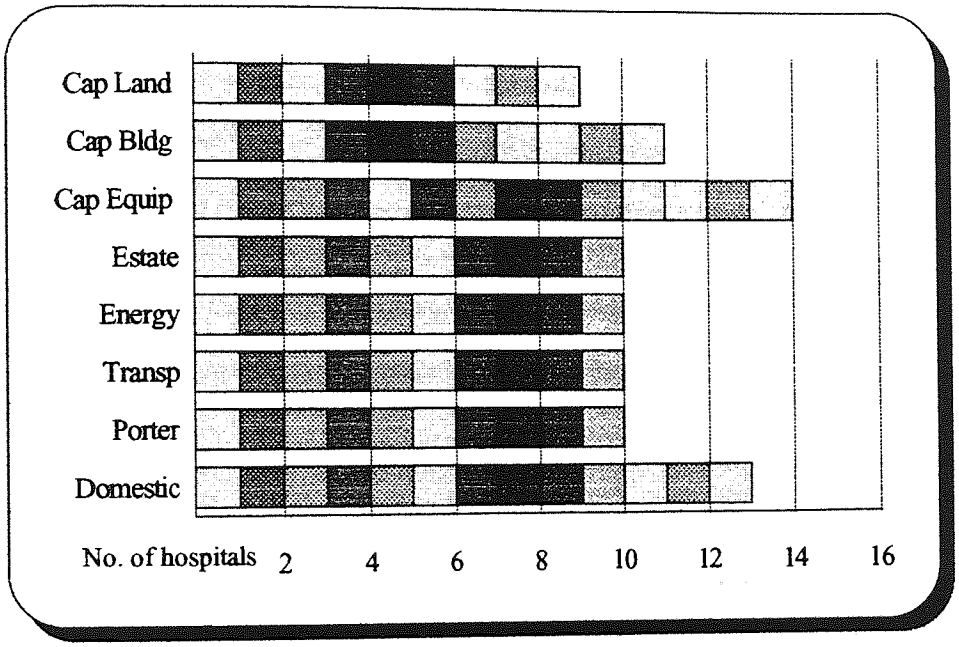
The capital charging system introduced into the NHS is complex, basically capital charges are made up of a current cost depreciation charge plus 6% interest. The system is explained more fully in Appendix L. The findings of the survey are in line with those of a Department of Health survey of 146 districts, where 80% of districts estimated the costs arising from capital charges would represent between 10% and 20% of their revenue allocations, although one inner London district put the figure as high as 39%. Considerable difficulties were encountered in applying capital charges in the NHS in 1991 (the first year of capital accounting). Massive discrepancies in the estimates of capital charges across the country forced the Department of Health to effectively 'write off the first year of the system as a purely paper exercise' Health Service Journal, 5 December, 1991. Estimated figures for 1991/92 produced in October 1990 by one district in the West Midlands were almost £2m or 33% above the revised/ actual charges for 1991/92. The NHS had enormous teething problems in moving from a system where the principles of capital accounting were entirely absent to one in which all assets over £1,000 needed to have interest and current cost depreciation applied. Further difficulties concerned the leaking of funds to the private sector (when DHAs and GPFHs placed contracts with private organisations) and the treatment of providers in areas with high property and land costs (NAHAT, 1991). From the point of view of economic efficiency, it is important that the costs of capital items are not ignored, however its value in representing opportunity cost in 1991/92 is extremely limited.

Treatment of overheads

For the average hospital, non direct patient care services account for 39% of total costs (Table J). Therefore a large proportion of healthcare costs cannot be directly attributed to contracts. The vast majority of hospitals included such costs by an addition to in-patient and out-patient contracts rather than through a staged approach i.e. assigning to direct treatment departments such as

theatres, radiology etc. for absorption into specialties. Figure 21 illustrates the extent to which selected support service costs were assigned to patient treatment departments for absorption into contracts.

Figure 21: Assignment of support service costs



Note: 3 hospitals had only assigned part of domestic service costs; and capital charges (3 groups) to patient treatment areas.

For some remote overheads this may be acceptable, but less than a third of hospitals fully assigned capital equipment to treatment departments, given the heavy capital equipment costs in some treatment departments (e.g. radiology) this must have distorted specialty costs.

Direct patient treatment services

The problem of achieving reasonable specialty costs and hence realistic prices was further exacerbated by the limited availability of activity/ cost systems for direct patient treatment services. None of the 36 hospitals had a case-mix management system and departmental costing systems were quite rare as shown in Table E. Case mix management systems enable resource use to be recorded against individual patient records and analysed by patient characteristic. Without such systems reliable costing below specialty level will be difficult to achieve. Even at specialty level, in 1991/92, not only were

overheads treated crudely, but also many direct patient care costs were assigned to contracts based on very limited financial information due to the lack of departmental activity/ cost systems in patient treatment departments.

Table E

Operational computer systems 1991

COMPUTER SYSTEM	% OF PROVIDERS
Case-mix	0
Nursing dependency	17
Pharmacy	42
Theatre	17
Pathology	36
Radiology	22

Many hospitals stated that departmental cost systems were now being introduced: a further 9 (25%) hospitals were installing nursing cost management systems; a further 6 (17%) theatre costing systems and a further 5 (14%) pharmacy costing systems. However, departmental cost systems for attributing direct patient care costs to contracts were not available in the majority of hospitals in 1991.

The product level

Although specialty contracts were prescribed as the norm for hospitals in 1991, hospitals were required to produce prices at procedure level for GPFHs, most hospitals had limited information from which to compile such prices. All hospitals based the procedure prices on specialty in-patient day costs, these were modified by 56% of hospitals for prostheses; by 47% for theatre costs and by 17% for drug costs. Over 30% of hospitals made no adjustments to the specialty in-patient day cost when compiling procedure costs. The variable costs relating to prostheses, drugs and theatre usage are likely to be significantly different from the average specialty cost for some GPFH procedures. For example, in the orthopaedic specialty, GPFH procedures include 'lumbar injection' and 'implanted bone substance', both of which had price variations in the West Midlands Region with coefficients of variation above 50%. Rather than setting individual prices for all 113

procedures, 6 (or 17%) of hospitals banded the procedures for pricing purposes; a common structure was major, intermediate and minor for each specialty, but there was not necessarily any common agreement as to which procedures fell into each grouping.

In determining their hospital costs and prices, 33 (92%) hospitals had used linked spreadsheets designed in-house or by another DHA and four had used the MARS model based on FCS software. Changes in expected activity levels had often been treated crudely, some stated "general percentage uplift", only 25% claimed to have made a systematic analysis of fixed and variable components.

6.6 Survey Findings and Implications

- Large variations in specialty prices were apparent in hospitals throughout the Region, however, procedure prices were even more diverse. It is extremely unlikely that such variations are largely due to different treatment patterns, efficiency or quality.
- The vulnerability of hospitals to market forces varied considerably. One hospital surveyed contracted with only 2 DHAs whilst at the other extreme, one hospital held contracts with 23 DHAs.
- Nearly 90% of contract income in 1991/92 is received through block contracts by acute hospitals in the West Midlands. In terms of the variability of income in 1991/92, only 2 hospitals had more than 5% other income at risk, but a third of the survey hospitals had between 2 and 4% at risk. Given the fixed nature of health service costs even modest variations can be critical. However, if prices are to lead to a more efficient distribution of NHS resources they must be clearly linked to quantity of service provided.
- Less than a third of hospitals attributed general service overheads to patient treatment departments, most attributed the overheads directly to specialties. Section 3.6 illustrates the potential discrepancies in cost attribution that can arise from such simplistic approaches.

- None of the hospitals surveyed had an operational case-mix management system, but it is difficult to see how costs can be confidently attributed below specialty level without such systems.
- Departmental cost systems were rare e.g. only 17% of hospitals had theatre costing systems, therefore even the cost attribution of some direct patient treatment services to specialties was undertaken with dubious precision. Price variances could be due to differing cost methods rather than differing efficiency.
- Over 30% of the hospitals surveyed based their GPFH procedure prices entirely on specialty in-patient day costs, but there are significant variations in resource consumption over and above variations in length of stay.

Cost methods and hence the prices produced for 1991/92contracts and ECRs in the West Midlands fell far short of the requirements necessary to enable an efficient allocation of NHS resources through the market. A high proportion of total costs were attributed to contracts on inadequate information. Even direct patient care costs at specialty level were of dubious credibility and the understanding of cost behaviour was very limited. Specialty contracts provided an imprecise definition of services (products) - variations in case-mix within the specialty were not addressed. On the other hand, where procedure prices were compiled they were often based on inadequate data and cost methods. Prices were not a reliable indicator of resources consumed. Price differences may have been spurious; differences may have been caused by difficulties in determining the prospective quantum of cost (particularly in relation to capital charges); inadequate activity measurement and poor methods of cost attribution. Furthermore, efficiency comparisons were hampered by the lack of consistency in cost allocation and apportionment methods between different hospitals. These findings were confirmed by a CIPFA study (CIPFA 1992), the Audit Commission's report and accounts for 1991/92 and the later survey undertaken by the National Steering Group on Costing.

However, in 1991/92, many restrictions were placed on the operation of the internal market: contracts were to be on the whole block contracts and for

DHAs, (though not necessarily GPFHs), were to reflect existing referral patterns. According to the survey, 89% of hospital income was from block contracts; 8% from cost and volume contracts and 3% cost per case. Block contracts which are specified in terms of facilities to be provided and for which no explicit workload is prescribed provide little incentive to improve efficiency. Cost and volume contracts place an explicit requirement on the provider in terms of patients treated, often a fixed price is paid up to a volume threshold above which a price per case is set up to a volume ceiling. Cost per case contracts are obviously the most risky, the provider has no assurity of income, whilst the purchaser risks losing control of expenditure if large commitments on a per case basis are incurred.

Following the survey, Figure 22 - the internal market continuum was developed which showed the researcher's view of how it was envisaged that contracts and cost information for pricing would progress.

6.7 Summary

This chapter has examined the cost-based pricing used in the first year of the NHS internal market. The conditions necessary for price signals to encourage economic efficiency were not apparent. Contract prices were not related to quantity, block contracts prevailed. Inadequate product definition for DHA contracts made it impossible to make valid efficiency comparisons between hospitals. Where products were more clearly defined i.e. GPFH procedures, prices did not reflect the comparative 'true' cost of resources consumed. A high proportion of hospital costs were attributed to contracts on inadequate information and there was a lack of consistency in cost allocation and apportionment methods between hospitals. In 1991/92 cost accounting was not fulfilling its fundamental role in the NHS internal market. Improved consistency, contract categories and bases of cost attribution were required to facilitate economic efficiency. The next chapter examines how cost-based pricing in the NHS internal market had developed three years later.

Figure 22:
The Internal Market Continuum

	1991		Mid 1990s
FORM OF CONTRACTS	Block	----------	Cost and volume Cost per case
PRODUCT DEFINITION	Specialty	----------	Procedure (Based on grouping of treatment plans)
COST METHODS			
Basic Approach	Top-down	----------	Bottom-up
Direct Treatment Services	Few cost systems	----------	*Departmental Cost Systems* Intermediate product costs: • Determined by standards for all major direct treatment services • RVUs used for less significant services • Analysis of fixed and variable elements
Overheads	Allocated or apportioned according to available apportionment bases (often direct to contracts)		*Influenced by direct patient treatment* Assigned to direct patient treatment department, included in intermediate product cost. *Remote overheads* Remain at hospital level, recovered by a percentage uplift to assigned costs.
PERFORMANCE MONITORING	Limited to intermediate outputs	----------	Systems for measuring final outcomes. Systematic Medical Audit Utilisation Review Programme.
	Departmental budgets	----------	Budget structures based on product lines, flexed according to contracts. Variance analysis at procedure level.

Source: Ellwood (1992)

Chapter Seven

THE 1994 WEST MIDLANDS SURVEY OF COST-BASED PRICING

7.1 Introduction

This chapter firstly considers the detailed guidance on costing for contracting issued by the NHSME in 1993. The development of the market and costing for contracting is then investigated through the 1994 West Midlands Survey. The 1994 survey, like the 1991 survey, includes a database of prices published by acute hospitals in the West Midlands and a questionnaire survey. Finally, the findings of the survey are summarised and assessed in the context of the research hypothesis.

7.2 NHSME Guidance on costing for contracting

In April 1993 the NHSME issued guidance on Costing for Contracting EL(93)26. This subsequently formed the basis of the first two chapters of the Costing for Contracting Manual which detailed the "minimum costing standards" to be applied in calculating prices for 1994/ 95 contracts.

The detailed guidance aims to

> "avoid differences in reported costs for the same patient treatment caused by unnecessary differences in cost allocation and apportionment between different providers" Annex A p15.

The guidance establishes:

- a minimum level of identification of costs by type: direct; indirect and overhead;
- a more standardised approach to methods of apportionment for indirect costs and overheads.

Emphasis is to be placed on treating as many costs as possible as direct costs. All overheads are to be fed through patient treatment services (PTS). The movement away from "steady state" is seen as requiring the development of a marginal costing approach and therefore the guidance also suggests:

- a minimum level of sophistication for the treatment of costs as variable, semi-fixed and fixed.

The Guidance seeks to remedy some of the problems found in the 1991 survey (Chapter 6), namely the crude and inconsistent methods of cost

attribution. The cost attribution methods are to require all costs to be fed through patient treatment services, in 1991, assignment of support service costs to patient treatment services was patchy and ad hoc (Figure 20). The Guidance also recommends minimum bases for apportionment of indirect costs e.g. domestic services are to be apportioned according to 'floor area cleaned'. The setting out of minimum standard apportionment bases should further improve consistency and hence comparability between alternative healthcare providers.

However, the guidelines are not obligatory -

> "The principles established represent strong guidance in the application of minimum costing standards which providers should meet as quickly as possible" EL(93)62 p7.

Similarly, the distribution of costs analysed in a standard format is not obligatory. "Voluntary co-operation" and a willingness to share cost and financial information is "encouraged".

The discussion on product categories in Chapter 3 and the 1991 survey (Chapter 6) highlighted the problem of identifying healthcare as a product for costing and pricing purposes. Progress on developing more meaningful product lines or contract categories is also addressed in the Guidance-

> "The National Steering Group on Costing (NSGC) believes that each specialty should be divided into a manageable number of conditions to represent treatment groupings which clinicians regard as sufficiently similar to be treated in the same way and which consume similar amounts of resource and which represent a high proportion of the total absorption costs of the specialty." p8 Annex B, NHSME 1993a.

From the point of view of economic efficiency, it is imperative that purchasers can compare the prices of similar products, and hence have the opportunity to respond to signals indicating relative efficiency. Standard contract categories are not expected to be costed and used in contracts nationally before 1995/96 (NHSME 1993c) and more realistically 1996/97 (Reeves 1993). Nevertheless, the NHSME has set out the intended process for costing key conditions using a bottom up analysis of costs which is reconciled to the top down analysis prescribed in the guidance. The standard analysis of costs into overhead, indirect and direct; and the prescribed classification of costs as fixed, semi-fixed and variable will aid comparison, but these aspects are secondary

to actually identifying comparable products. Furthermore, 'openness in costing' is only 'encouraged', it is not obligatory and therefore such classification and analysis may not be available to aid purchasers in their evaluation of alternative providers.

7.3 1994/95 Prices in the West Midlands

To determine both how acute service providers had implemented the costing guidance and how costing for contracting was developing, a further survey of the West Midlands was undertaken. The prices of all acute DMUs and Trusts were analysed. Information on average specialty prices was not available for all DMUs and Trusts in the West Midlands, many use bandings for their ECR tariffs e.g. major, intermediate and minor, but there is no common classification for such groupings. GPFH procedure prices for general surgery in 1994/95 are shown in Tables K(i) and (ii), all GPFH procedure prices are detailed in Appendix M.

For 1994/95 prices, DMUs and Trusts priced procedures separately for in-patient and day case provision, this has removed a large element of the variability which was present in the 1991 survey, the coefficient of variation is 50% or less for all GPFH procedures. Indeed when the coefficient of variation is 50%, there are only 2 providers publishing prices for those day case procedures (Appendix M). However, several DMUs/ trusts are charging the same price for all day case procedures within a specialty. Indeed one DMU did not differentiate between specialty in-patient procedures for GPFHs, admittedly the DMU only provided a small number of procedures. There must surely be differing resource use between procedures, not least because of the differing length of stay associated with individual in-patient procedures. On examining the day case prices, it was found that the price variations were often largely explained by the crude pricing structure. For example, one DMU used one price for all general surgery procedures, this provider had the lowest price for 20 out of the 35 GPFH general surgery procedures. A Trust banded the procedures into just three bands, this trust had the highest price for 15 out of the 35 GPFH general surgery procedures.

Table K (i):

1994/95 GPFH general surgery prices (in-patients) - West Midlands

IN PATIENT	Price per consultant episode			Range £	CV %	Trusts/ DMUs No.
Procedure	Average £	High £	Low £			
Partial Thyroidectomy	1,191	1,879	856	1,024	24	23
Total Thyroidectomy	1,429	2,418	956	1,462	23	23
Aberrant Thyroid Gland	1,172	1,789	570	1,219	32	5
Salivary Gland	843	1,359	287	1,072	25	21
Parathyroid Gland	1,245	2,033	646	1,387	21	20
Varices of Oesophagus	2,015	9,916	254	9,662	22	17
Dilation of Oesophagus	598	1,403	226	1,177	27	18
Oesophagoscopy	528	1,403	226	1,177	23	17
Gastrectomy	2,905	5,297	1,544	3,753	23	22
Vagotomy	1,760	2,458	1,294	1,164	28	22
Endoscopy	670	1,477	163	1,314	31	16
Laparoscopy	438	901	287	614	24	19
Lesion of Small bowel	1,749	2,821	862	1,959	22	23
Part Colectomy	2,605	3,372	1,710	1,662	27	22
Total Colectomy	2,773	3,616	558	3058	21	22
Rectum Excision	2962	4553	1710	2843	26	22
Sigmoidoscopy	478	1242	163	1079	22	17
Colonoscopy	507	1242	229	1013	23	18
Exteriorisation of Bowel	2267	3376	1104	2272	27	23
Prolapsed Rectum	1653	2437	874	1563	28	24
Haemorroidectomy	779	1051	381	670	24	24
Anal Sphincter	400	706	205	501	24	15
Pilonidal Sinus	608	852	425	427	32	21
Anal Fissure	592	1143	335	808	23	22
Gall Bladder	1462	2362	824	1538	27	24
Bile Duct	2030	4792	912	3880	18	23
Mastectomy	1227	1816	606	1210	25	24
Breast Lesion	687	1193	317	876	30	22
Inguinal Hernia	631	955	371	584	26	26
Femoral Hernia	638	856	335	521	29	25
Incisional Hernia	925	1384	437	947	26	23
Varicose veins	534	878	334	544	26	24
Ingrowing toenail	347	691	233	458	24	18
Skin biopsy	457	801	275	526	24	18
Lymph node excision	568	1062	317	745	23	22

Table K (ii):

1994/95 GPFH general surgery prices (day cases) - West Midlands

DAY CASE	Price per consultant episode			Range £	CV %	Trusts/ DMUs No.
Procedure	Average £	High £	Low £			
PartialThyroidectomy	329	600	179	421	35	5
Total Thyroidectomy	331	600	179	421	45	3
Aberrant Thyroid Gland	336	336	336	0		1
Salivary Gland	366	892	179	713	25	13
Parathyroid Gland	372	600	179	421	41	3
Varices of Oesophagus	292	600	110	490	32	11
Dilation of Oesophagus	285	517	154	363	29	23
Oesophagoscopy	248	485	109	376	24	22
Gastrectomy	359	600	179	421	42	3
Vagotomy	372	600	179	421	41	3
Endoscopy	202	485	99	386	21	23
Laparoscopy	295	673	161	512	23	20
Lesion of Small bowel	330	600	179	421	38	4
Part Colectomy	390	600	179	421	50	2
Total colectomy	390	600	179	421	50	2
Rectum Excision	390	600	179	421	50	2
Sigmoidoscopy	218	485	99	386	21	24
Colonoscopy	263	536	109	427	24	24
Exteriorisation of Bowel	390	600	179	421	50	2
Prolapsed Rectum	393	600	179	421	38	4
Haemorroidectomy	293	446	179	267	28	20
Anal Sphincter	243	485	60	425	19	22
Pilonidal Sinus	278	485	179	306	28	16
Anal Fissure	264	485	154	331	24	25
Gall Bladder	390	600	179	421	50	2
Bile Duct	394	732	145	587	28	15
Mastectomy	344	600	179	421	32	10
Breast Lesion	297	489	114	375	27	23
Inguinal Hernia	341	606	179	427	29	24
Femoral Hernia	331	606	179	427	26	21
Incisional Hernia	351	606	179	427	29	16
Varicose veins	322	519	179	340	29	24
Ingrowing toenail	237	485	69	416	19	27
Skin biopsy	224	485	69	416	18	27
Lymph node excision	290	539	169	370	27	25

Extract from Appendix M

Although, generally variations in prices between providers had reduced from the 1991 survey position, wide variations in prices still occurred. The price for the treatment of an ingrowing toenail varied from £69 to £691: from £233 to £691 for in-patient treatment and from £69 to £485 for day case treatment. Did these prices indicate comparative efficiency? It was apparent that a significant amount of the variation related to the crude and inconsistent pricing structure adopted by some providers, did the remainder relate to comparative efficiency? Had cost accounting methods for pricing healthcare developed to overcome the deficiencies detailed in the previous chapter? This is considered through the questionnaire survey.

Table L:

Acute service providers in the West Midlands Region 1994

District Health Authority	DMU/ Trust
North Worcestershire	Alexandra Healthcare NHST
	Kidderminster Healthcare NHST
Herefordshire	Hereford Hospitals NHST
Worcester and District	Worcester Royal Infirmary NHST
Shropshire	Royal Shrewsbury Hospital NHST
	Princess Royal Hospital NHST
	Robert Jones & Agnes Hunt NHST
North Staffordshire	North Staffordshire Hospitals NHST
South Staffordshire	Burton Hospitals NHST
	Mid Staffordshire General Hospitals NHST
	Rugby NHST
Warwickshire	George Elliot Hospital NHST
	South Warwickshire Hospitals NHST
South Birmingham	South Birmingham Acute Unit
	Birmingham Children's' Hospital
North Birmingham	Birmingham Heartlands Hospital NHST
	Good Hope Hospital
	Dudley Road - City Hospital
	Single specialty acute services
Coventry	Walsgrave Hospitals NHST
Dudley	Dudley Group of Hospitals NHST
Sandwell	Sandwell Healthcare NHST
Solihull	Solihull Hospital
Walsall	Walsall Hospitals NHST
Wolverhampton	Royal Wolverhampton NHST

7.4 The 1994 questionnaire survey

The 1994 questionnaire (Appendix N) contained twenty-one main questions: the questions largely asked for factual data concerning the types of contracts, the number of purchasers, the application of the NHSME guidance and the resulting cost analysis. Some opinion questions were included relating to the extent of revision to the costing process resulting from the NHSME guidance and the adequacy of information systems to meet current and future requirements. The questionnaire was supported by the West Midlands Research Group of the HFMA (Healthcare Financial Managers Association) who provided the contact points at the acute service providers (25 DMUs and Trusts) in the West Midlands Health Region, Table L. There had been many mergers of healthcare providers in the previous three years, NHS trusts/ DMUs were now larger than in 1991. Sixteen questionnaires were returned (64% response rate).

The fifteen DMUs and Trusts which reported their contract income, had combined contract income of over £814m. Individual DMU/ trust income varied from as little as £9m to over £148m (Figure 23a). There was a marked change in the size of provider organisations in 1994 compared with 1991. In 1991, 27% of providers had budgets below £10m, by 1994 only one of the sixteen providers responding to the questionnaire, had a budget below £10m. In 1991 only 3 out of 36 providers had budgets above £50m, in the 1994 survey, 7 out of 15 had budgets above £50m (Figure 23b). Correspondingly, small providers with budgets below £10m accounted for 6% of expenditure in the 1991 survey and only 1% in 1994 (Figure 23c).

Figure 23a: The expenditure of DMUs/ Trusts in the 1994 survey

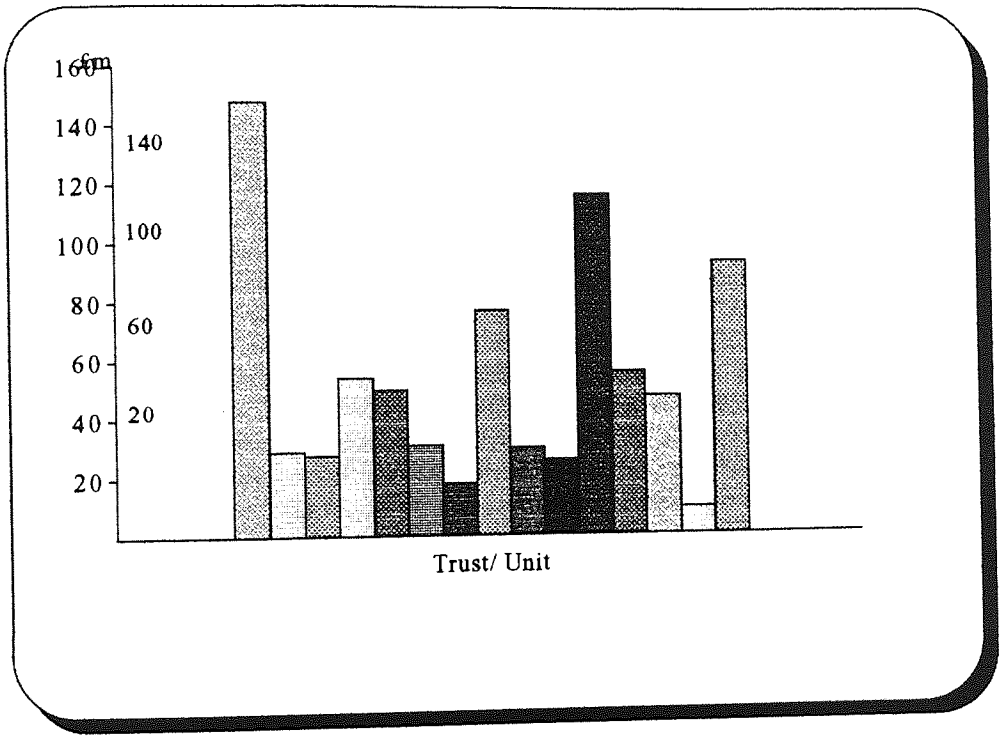


Figure 23b: DMUs/ Trusts in the 1994 survey analysed by size £

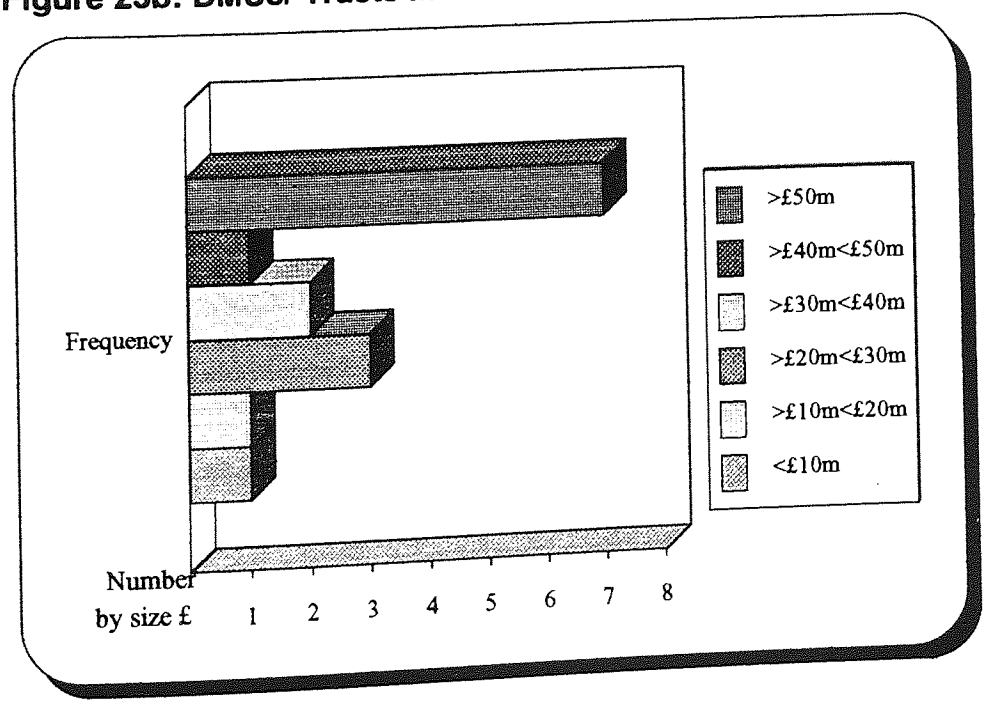
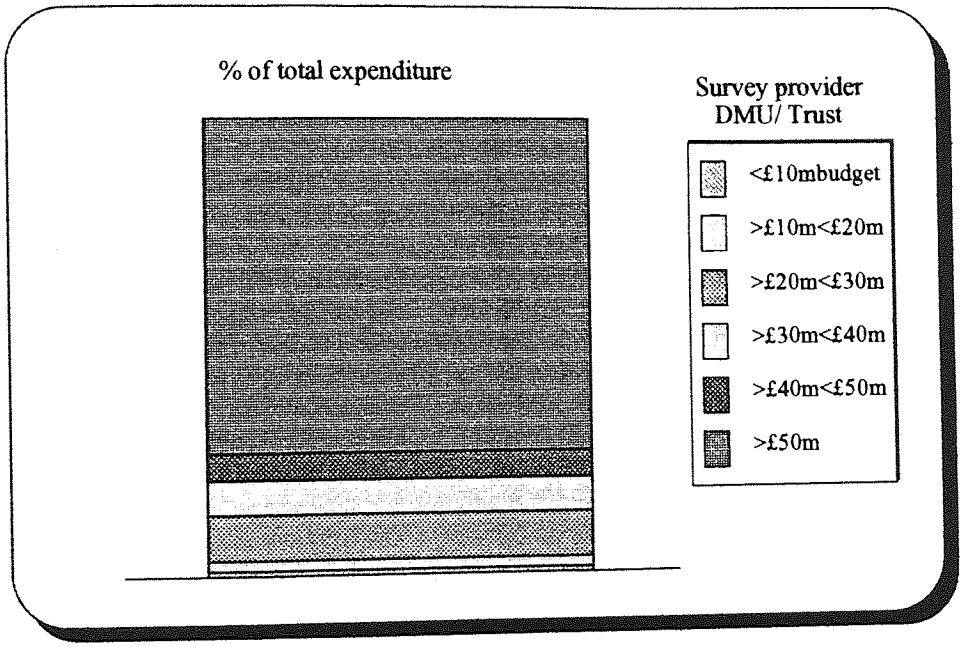


Figure 23c: Total service expenditure by DMU/ Trust size



7.5 Market Changes

Some movement towards contracts related more closely to activity i.e. from block contracts to cost and volume or cost per case was evident (Table M).

Table M: The Form of Contracts Placed 1994/95

TYPE OF CONTRACT	% OF CONTRACT INCOME	
	1991/92	1994/95
Block	28	26
Block with indicative volume	61	58
Cost and volume	8	11
Cost per case	3	5
TOTAL	100	100

Relating prices to activity is seen as fundamental in using market mechanisms to encourage economic efficiency, without it, purchasers cannot make rational choices between providers, and providers will still be impeded in their attempts to become more efficient because of the 'efficiency trap'.

The number of providers and HA purchasers is decreasing. In 1991/92 a provider contracted on average with 10 HAs and 2 GPFHs. By 1994/95 many providers had merged (as had four purchasing authorities), but a provider on average contracted with 9 HAs (and 7 GPFHs). Thus in 1994 the market in the West Midlands consisted of fewer but bigger providers and purchasers, the market was becoming more oligopolistic. Although many market proponents (e.g. Baumol et al) would argue that it is the threat of potential competition, rather than competition per se that is important, the dangers of monopolistic behaviour would seem to be increasing and ensuring contestability must be increasingly difficult (because of the heavy investment and specialist resources required) as the market becomes more concentrated.

7.6 Development of the cost methods behind the prices

In the survey, over half of the provider units/ trusts regarded the 1993 NHSME guidance as requiring substantial or major revision to their cost attribution process.

Table N:

Revision to the cost attribution process 1994/95 contracts

REVISION	No. of Providers	Percentage
Major	2	13
Substantial	8	50
Minor	5	31
No revision	1	6
Total	16	100

The main areas of revision identified were:

- the additional cost classification and analysis i.e. variable, semi-fixed and fixed; and direct, indirect and overhead;
- the two stage apportionment of indirect/ overhead costs;
- the apportionment bases.

Cost classification and analysis

- cost classification

Prior to the 1994/95 costing and pricing round, only 2 providers identified cost behaviour using variable, semi-fixed and fixed classifications, a further two providers used variable and fixed classifications. If providers in the NHS internal market are to be able to price contracts on a cost basis confidently for varying levels of activity, it is important to be able to assess cost-volume changes with reasonable precision. The NHS Costing for Contracting Manual provides brief definitions of the classifications -

> Fixed costs
> "costs should be regarded as fixed costs if they are unaffected by in-year activity changes in a one year period."
> Semi-fixed costs
> "Semi-fixed costs, otherwise known as step costs, are those that are fixed for a given range of activity, but may increase or fall as activity rises to, or drops below, specific levels of activity i.e. they are partly affected by changes in activity."
> Variable costs
> "variable costs are those that tend to vary with the level of activity, and in such a way that a near proportionate change in cost accompanies a change in activity."

In the 1994 survey, 75% of providers expressed no difficulty in undertaking the required analysis, the remaining 25% identified the following problems:

- current budget analysis does not allow easy identification of variable costs;
- difficulty in establishing 'time scale', "so many fell into semi-fixed";
- some classifications need refining;
- disagree with some classifications e.g. treatment of computer hardware as semi-fixed.

The relevant extract from the Costing for Contracting Manual (*cost classification and cost analysis*) is reproduced as Appendix P. The above comments are likely to express problems encountered by many healthcare providers. The 1991 survey showed the use of budget data for contract price determination rather than historical cost, by 1994 this had become the norm. However, the NHSME guidance for cost classification is based on the annual reporting categories, the use of these categories by the NHSME is understandable as they had been previously prescribed for use throughout

the health service for many years, but it is inevitable that they will not correlate easily with the budget categories designed and used for internal management purposes.

The second comment of so many costs falling into semi-fixed is also a major difficulty with the cost classification in terms of its usefulness to aid the contracting process. The bulk of hospital expenditure falls into this category. For example, nursing costs alone account for roughly 50% of hospital expenditure, there is no doubt that if activity increases sufficiently more nurses are required and vice versa, but it is the understanding of the 'step' that is important to the contracting process, without such knowledge the classifications have very limited use.

As the third comment implies, the classifications are set at such a broad level, it is inevitable that they cannot be realistically applied without refinement, indeed the Manual actually states that where providers are able, they should analyse costs at a lower level to improve the level of classification/ analysis achieved (Costing for Contracting Manual page 10). Consequently there is considerable scope for inconsistency.

The ranges for the total level of variable, semi-fixed and fixed costs at each provider unit/ trust are shown in Table O.

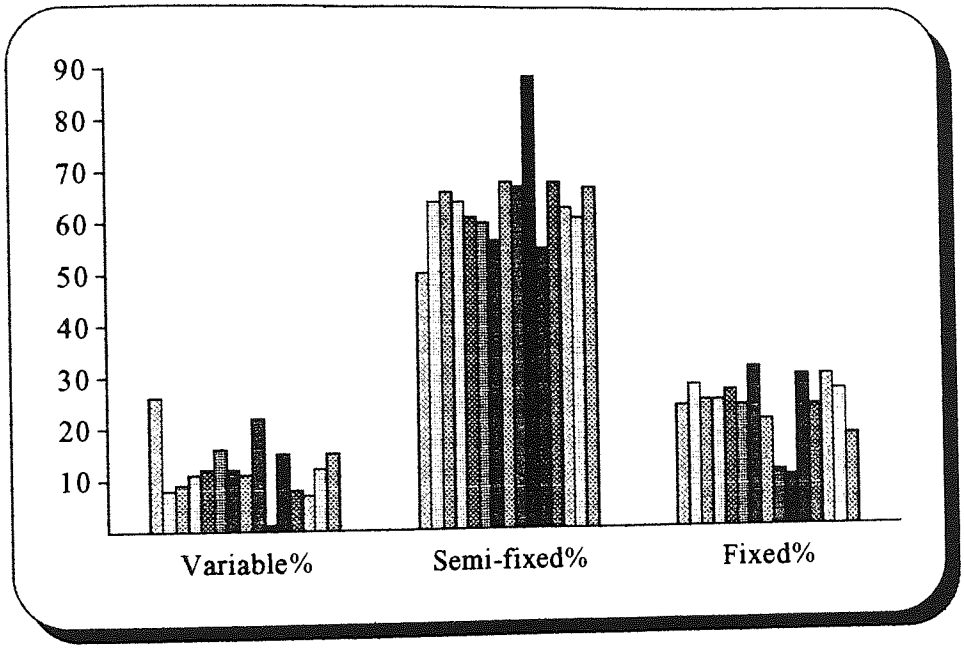
Table O: Cost classification 1994/95 contracts

COST CLASSIFICATION	RANGE AS % OF TOTAL COST	AVERAGE
Variable	1.2 to 26	12
Semi- fixed	50 to 88.8	64
Fixed	10 to 31.5	22

Vast variations in analysed cost behaviour are apparent, casting doubt on whether all providers used a similar approach to the analysis (Figure 23). If the provider with the extremely low level of variable costs is removed the ranges are 7 to 26% for variable costs; 50 to 68% for semi-fixed and 11 to 31.5% for fixed costs (these ranges are apparently wider than those found by the NHSME reference sites, Costing for Contracting Manual, Figure 7.B.1.). Variations by specialty were great. The specialties identified as having relatively high levels of variable costs are: anaesthetics (up to 64%); oncology

(up to 36%) and haematology (up to 44%). Low variable cost specialties are: obstetrics; paediatrics and geriatric medicine.

Figure 24: Cost classification - survey DMUs/ Trusts 1994



- Cost analysis by type

Only two provider units/ trusts expressed any difficulty in analysing costs as direct, indirect or overhead (Appendix O sets out the detailed NHSME guidance on cost analysis). Expressed difficulties related to multi-specialty wards and direct *department* costs as opposed to *specialty*. The current guidance does little to remedy these problems:

> "The analysis of costs as direct, indirect and overheads should be in relation to specialty.....wherever possible. Otherwise it should be in relation to wards/ departments/ cost centres." p2 NHSME , Costing for Contracting - The 1994/95 Contracting Round, FDL (93) 59.

The classification of costs as direct etc. depends on the cost object, at present NHS costing is still grappling with the problem of identifying appropriate 'products' for costing and pricing purposes, therefore the guidance cannot be precise on this issue.

The ranges for the total level of direct, indirect and overhead costs at each provider unit/ trust are as shown in Table P. Only 10 DMUs/Trusts provided the analysis, two stated that they were unable to provide such analysis at that time.

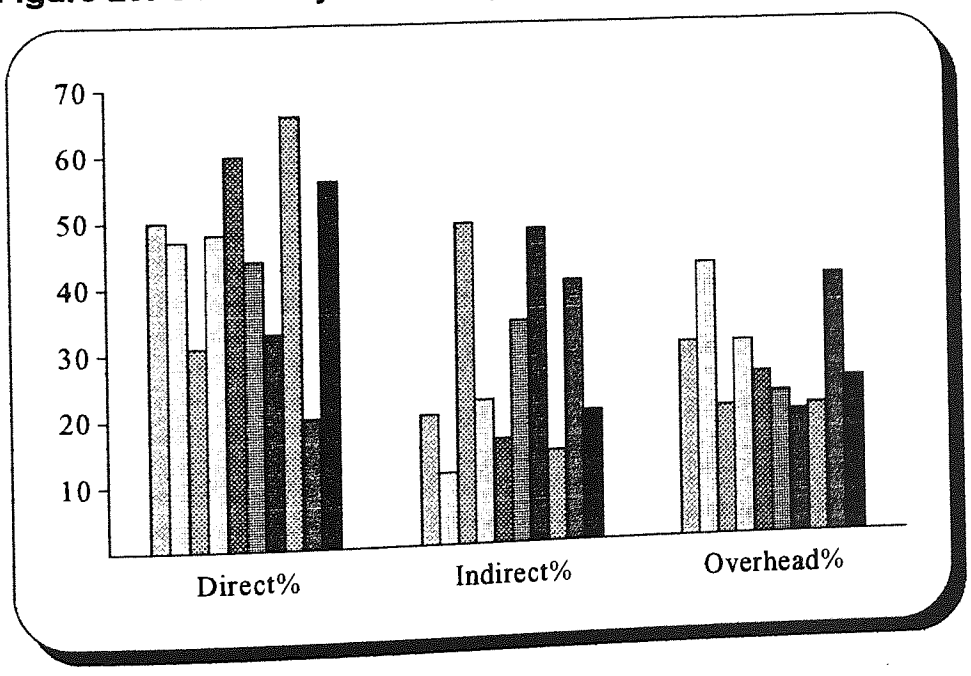
Table P: Direct, indirect and overhead costs 1994/95 contracts

COST ANALYSIS	RANGE: % OF TOTAL £	AVERAGE
Direct	20 to 60	45
Indirect	11 to 49	28
Overhead	19 to 42	27

The variation in the analysis of total provider costs into direct, indirect and overhead categories by individual DMUs/Trusts is shown in Figure 25.

The range of direct costs within specialties at individual provider units/ trusts is much greater. For example at one provider unit/ trust, the level of direct costs varies according to specialty from 4% to 74%, a further provider unit/ trust has a variation from 8% to 82%. Obstetrics was most frequently stated as the specialty with the highest level of direct costs.

Figure 25: Cost analysis - survey DMUs/Trusts 1994



Fifty percent of the provider units/ trusts did not convert the local budget costs into nationally recognised categories prior to cost classification and analysis. This may partly be because the requirement was not made explicit in the earlier guidance and the Manual was not received until September 1993 after

the costing for pricing process was well underway in most units/ trusts. The Costing for Contracting Manual states:

> "To enable national guidance on allocation and apportionment methods to be applied to local management and budget structures, it is necessary to regroup or convert the local budget costs into nationally recognised categories, i.e. "TFR1/ HFR21 Hospital and Community Services - Departmental Analysis". This enables the allocation and apportionment methods .....to be applied to each department in a standardised way that can be replicated." para 2.3

Some providers stated that there was "no reason to do so" or "no need" whilst most non conformists pointed out that their own budgets were at a more detailed level and therefore enabled more detailed cost apportionments to be applied than could be achieved through TFR1/ HFR21 groupings.

Two stage apportionment of indirect/ overhead costs

- A staged approach

The guidance puts forward a two stage process for the attribution of indirect or overhead costs to specialties-

> "a two stage apportionment of support services, via patient treatment services, to specialty is recommended where appropriate. In this way patient treatment services which require relatively high levels of support services will channel their costs through to the specialties they serve." Costing for Contracting Manual page 19.

This recommendation, develops costing for contracting along the lines set out in Figure 12, section 3.6. Direct apportionment of non patient treatment departments to patient treatment services is acceptable under NHSME guidance, but more sophisticated approaches are not precluded. One provider, however, used a 10% uplift to specialty costs to cover general overhead items and a further two providers attributed all support services directly to specialties rather than via patient treatment services. Considerable variation was apparent as regards which support services were attributed using a staged approach, (Table Q). Table Q shows an improvement both in the level of sophistication in costing and consistency between providers, for example, the 1991 survey found only 50% of providers attributing domestic services to PTS; 28% of portering/ transport and 28% of building or

engineering maintenance. However, a significant level of overhead and indirect costs continue to be apportioned directly to specialties.

Table Q:

Support Services attributed via Patient Treatment Services (PTS)

SUPPORT SERVICE	% of providers attributing via PTS
Domestic	81
Catering	62
Laundry	69
Portering/ transport	87
Building/ Engineering maintenance	81
Site overheads	69
General management	75

- The apportionment bases

Twenty percent of provider units/ trusts used less than the minimum standard apportionment base specified in the Costing for Contracting Manual (reproduced as Appendix O). The main areas where other apportionment bases were substituted were building and engineering maintenance, energy, training and education, pathology, laundry/ linen, porters/ transport and theatres. One provider stated that theatre sessions were used rather than minutes partly because the minutes data was suspect, but also because sessions were regarded as a better determinant of cost.

Cost / resource management systems

Two thirds of the provider units/ trusts reported incurring no additional costs for the 1994/95 costing and pricing exercise. The highest reported additional cost was £22,500. The most commonly used computer software in the West Midlands Region for costing for contracting is the Specialty and Procedure Pricing System (SAPPS) which is used by half of the provider units/ trusts in the survey; 38% of providers use in-house systems often based on lotus spreadsheets. Two providers linked their spreadsheets to their case-mix or HISS system. The following systems: The Accountant - SECTA, Thorn EMI DRG Cost Model and the Bradford Calderdale, were not used by any of the

respondents to the survey for the 1994/95 costing and pricing exercise, all three systems were identified as commonly used systems by the NHSME EL(93)26.

However, the future development of the costing for pricing systems to treatment categories as indicated by the NHSME in FDL(93)51 and later included as Chapter 3 in the Costing for Contracting Manual, will require heavy investment in activity information systems due to the current lack of resource management information. Case-mix management systems were only operational at a third of the provider units/ trusts. With the exception of pharmacy, computerised activity information was not normally available for many patient treatment services as shown in Table R.

Table R: Operational activity information systems

COMPUTER SYSTEM	% OF PROVIDERS	
	1991/92	1994/95
Case-mix	0	38
Nursing dependency	15	25
Pharmacy	44	88
Theatre	15	38
Pathology	36	50
Radiology	23	25

Case mix databases are very expensive to install and operate, Brunel university estimated that the six pilot resource management hospitals made over £1m investment each in information systems alone with no measurable improvements in patient care (Packwood et al 1991).

Two thirds of providers feel their existing cost and information systems are inadequate for meeting the further NHSME guidance on costing for pricing contracts below specialty level.

Pricing below specialty level

Providers must price below specialty level for GPFH procedures, but currently the cost information for GPFH prices is often based on estimated resource usage rather than determined through a systematic costing exercise which

analyses total costs for each cost component. Nevertheless, GPFH pricing has become more sophisticated (Table S).

Table S: The cost components of GPFH procedure prices

COST COMPONENT	% OF PROVIDERS	
	1991/92	1994/95
Average specialty cost per day	100	100
Theatre costs	49	62
Drugs	15	25
Prostheses	54	88

Although 56% of provider units/ trusts charge some purchasers, other than GPFHs, prices calculated at below specialty level there is little consistency in the sub-specialty groupings used, sometimes providers use their own classifications to band treatments into routine/ complex or major/ intermediate/ minor; some providers choose to price a few significant procedures separately. Two providers used the GPFH procedure prices for all purchasers, where this is not followed, some cross-subsidisation between purchasers is inevitable.

The effect on purchaser contract prices

The survey was undertaken in January 1994, at the commencement of the contract negotiations for 1994/95 contracts. It was therefore too early to establish the extent to which the cost analysis and classification was made available to purchasers, such openness was clearly encouraged in the NHSME guidance, but the NHSME stopped short of making disclosure obligatory. Only one provider had distributed information on cost behaviour to purchasers for 1993/94 contract negotiations, but providers may have made other cost information available to purchasers, especially host purchasers.

The provider units/ trusts were asked to identify the number of their purchasers whose contract quantum had changed significantly because of changes to the method of costing and pricing contracts. However, no providers identified cost shifts per purchaser over £500,000 resulting from

their revised costing and pricing system. Only two providers identified cost shifts affecting individual purchaser(s) by more than £100,000. Both providers were not particularly large, they had quantum of cost at or below £50m and several DHA purchasers, (the survey covered provider units/ trusts with quantum of costs ranging from £9m to £148m, Figures 19a,b,c). Given the substantial or major revision to the costing system reported by the majority of providers, it is surprising that cost shifts were not more prevalent. It may be that cost shifts between specialties may not have resulted in large shifts in individual HA contracts because of the mix of specialties purchased by HAs. On the other hand, the case studies show that the effects of the cost changes were sometimes manipulated (chapter 9). As reported at the start of this section, the number of providers and HA purchasers is decreasing. The market is dominated by a few (usually) knowledgeable negotiators who agree contracts covering many products including non price aspects of service delivery. In such circumstances, neo-classical economic theory propounds that it is highly unlikely that cost will be the major determinant of price (see Appendix A, the economist's model for establishing optimum price). If the neo-Austrian perspective is taken, then whilst oligopoly or even monopoly is not necessarily detrimental to efficiency, pricing will be a matter of strategy, only if the market is clearly contestable can the providers be expected to strive to be efficient.

7.7 Survey findings and implications

- Price comparisons for DHA contracts and ECRs were difficult because of the lack of consistent contract categories.
- Price variations for GPFH procedures were partly due to the crude pricing structures used by some providers
- The costing for contracting guidance has required most providers (63%) to substantially revise their approach to costing and pricing contracts.
- 75% of providers expressed no difficulty in applying the guidance regarding the additional cost classification (fixed; semi-fixed; variable). However, the considerable variation reported regarding the level of such costs, casts doubt on whether the guidance is consistently applied.

- Similarly the vast majority of providers reported no problems concerning the cost analysis by type, but the cost analysis by type shows large variations between individual providers.
- Half the providers did not regroup their budgets into nationally recognised categories in order to consistently apply the guidance
- Only one provider reported using a percentage uplift to cover general overhead items. The majority of providers are adopting a two staged approach to attribute support services, but there are instances of providers placing all their support service costs direct to specialties rather than passing them through patient treatment services
- Minimum standard apportionment bases were generally achieved
- SAPPS and in-house spreadsheet systems are widely used by providers in the West Midlands.
- Only one third of providers reported incurring additional costs on their costing for pricing exercise for 1994/95 contracts. The highest reported cost was £22,500.
- Case-mix and other resource management systems are not available in most provider units/ trusts
- Considerable development is necessary to achieve systematic costing and pricing using consistent contract categories below specialty level.
- Some progress towards contracts related more closely to activity was apparent, but block contracts still predominate.
- Surprisingly few cost shifts between purchasers were reported

The guidance sought to achieve consistency and a minimum level of sophistication in costing for contracting. The West Midlands survey shows that consistency has improved, but it is far from assured. Greater clarity, timeliness and compulsion is necessary if increased consistency is required. Although the guidance for the 1994/95 contracts has been implemented, (albeit to varying degrees), fairly cheaply and easily, the development of costing for contracting below specialty level is likely to be much more onerous.

On completion of the 1991 survey it was expected that progress in costing for contracting would be as set out in Figure 21, the internal market continuum; the deficiencies of NHS cost information were evident, but there was a clear perception of where the market was leading. However, progress along the internal market continuum has been slow: Only a small shift away from block contracts has materialised. Standard contract categories based on procedures have not been implemented, (although they should be used to inform the contracting process in some specialties for 1995/96). The move towards procedure costing will increase the currently very limited use of "bottom-up" costing and there is evidence of an increase in departmental cost/ activity systems, but there is still a dearth of information and resources required for more accurate cost attribution especially at procedure level. The 1994 West Midlands Survey, on the whole, has shown only limited progress of costing for contracting along the path envisaged in the internal market continuum.

More fundamentally, the survey has queried whether the approach to contract pricing needs to be reassessed in the light of the developing market. The 1993 NHSME guidance sought to facilitate the market's efficiency aims by endeavouring to make: prices reliable indicators of relative efficiency and therefore feed appropriate signals to the market to enable an improved distribution of NHS resources. However, there are indications that comparability and consistency will be extremely difficult to ensure, particularly as the market environment may not be conducive to a uniform, full-cost based pricing mechanism.

7.8 Summary

This chapter has examined how cost-based pricing has developed after three years of the NHS internal market and after detailed guidance had been issued by the NHSME. The conditions necessary for price signals to encourage economic efficiency were still not apparent. Some progress towards contracts more closely related to activity had been made, but the vast bulk of provider income still came from block contracts. Inadequate product definition, and

indeed the lack of even uniform specialty pricing, made efficiency comparisons between providers for much of their workload impossible. Where products were more clearly and consistently defined i.e. GPFH procedures some of the price variation was due to the crude pricing methods used. The cost methods behind the prices had improved and the NHSME guidance had led to increased consistency, but there were examples of non-compliance and there was much local subjectivity surrounding application of the guidance. There was still a lack of activity systems to enable even direct patient care costs to be attributed accurately to specialties and most importantly to enable more meaningful, consistent contract categories to be used below specialty level. The costing for contracting process and the issues surrounding it are examined in more depth in the case studies in the following two chapters.

Chapter Eight **THE CASE STUDIES - COSTING AND PRICING**

8.1 Introduction

The preceding two chapters have provided an overview of cost-based pricing in the first year of the market and three years into the market. A more detailed picture of the costing and pricing process is developed through the use of case studies. This chapter provides an in depth view of the costing for pricing process. Firstly, the two acute healthcare providers used as case studies are set out; the 1993/94 costing for contracting approach and the resultant prices are examined before studying the 1994/95 contracting round. The cost model adopted by each case is set out and the thinking behind it; the perception and effect of the NHSME guidance on the costing process is examined and the approach to costing product lines investigated.

8.2 The Two Acute Healthcare Providers

Two case studies with different geographic environments, size and complexity of service provision were chosen.

The St Somewhere Trust

St Somewhere NHST has a budget of £90 million and more than 4,000 staff. The Trust comprises two hospital sites in a large conurbation; it has over 1200 beds with supporting out-patient departments. The hospitals are resource management/ hospital information support system pilot sites, the first phase of which has been implemented. The largest hospital had become a NHS trust on 1 April 1992, however, it had merged with a neighbouring directly managed hospital on 1 April 1993 to form a new, larger trust.

The Trust has a management structure consisting of 10 clinical directorates:

Support directorates	Specialty-based directorates
Pathology	Woman and Children's
Radiology	Orthopaedic
Theatres	Cardiac
Therapy	Surgery
	Medicine
	Radiotherapy

Each clinical director is supported by a business manager and a senior nurse where appropriate. The income of St Somewhere in 1993/94 is set out in Table T.

Table T:

1993/4 Income of St Somewhere Trust

PURCHASER DHAs in the West Midlands	% OF CONTRACT & ECR INCOME 1993/94
1	70
2	5
3	2
4	-
5	-
Regional Specialties	19
Sub total (West Midlands)	**96**
DHA outside West Midlands	1
GPFHs	1
ECRs	1
Total	**100**

Source: St Somewhere Corporate Contract 1993/94

In 1993/94, the Trust received 70% of its contract income from its host DHA and a further 19% from regional specialty work (which is devolved from the RHA to the DHAs for 1994/95 contracts). The GPFH income was less than 2% of contract income, but was set to double when new fund-holders joined the scheme in 1994/95. The Trust despite being in a large conurbation, had not had a high level of income at risk in the early years of the market, but the level of income at risk is increasing sharply.

Thereabouts Acute Unit

The Thereabouts Unit was directly managed by its host purchasing authority in 1993/94, but became a trust on 1 April 1994. Thereabouts Unit comprises three hospitals in a small city of a shire county. The hospitals have a budget of £30 million, provide 455 in-patient beds and employ over 1,700 people.

Thereabouts unit has four clinical directorates: support services (including pathology and radiology); surgery; medicine; and woman and children's services. Each directorate has a clinical director and a business manager. The Unit's contract income is analysed in Table U.

Table U: 1993/4 Income of Thereabouts Unit

PURCHASER	**% OF CONTRACT & ECR INCOME 1993/94**
DHAs in the West Midlands	
1	75
2	2
3	-
4	-
Sub total (West Midlands)	**78**
DHAs outside West Midlands	10
GPFHs	11
ECRs	1
Total	**100**

Source: Thereabouts Unit Corporate Contract 1993/94

In 1993/94, 75% of the Thereabout Unit's contract and ECR income came from the host DHA. Despite being located in a rural area, the Unit has a significant amount of risk income, in 1993/94 11% of its income was from GPFHs this was to increase to over 12 % in 1994/95.

8.3 The costing processes 1993/94 contracts

The costing processes for 1993/94 of the two case studies varied markedly. The main aspects are summarised in Table V. These costing approaches were adopted before the NHSME issued the detailed Guidance which later formed the NHS Costing for Contracting Manual, hence the principles to be followed were only set out in broad terms (section 6.2).

Cost attribution

The St Somewhere Trust used a framework of cost flows whereby capital charges and four categories of overhead (telecommunications, estate, finance and domestic services were attributed using a staged (step-down) approach

as illustrated in Figure 10 earlier. Fifty-eight percent of budget costs were attributed direct to specialties. Seven percent of budget costs were treated as a general overhead and added as a percentage uplift to the specialty costs (after inclusion of other overhead and indirect items).

Table V: Costing Approaches 1993/94 Contract Pricing

	St Somewhere Trust	Thereabouts Unit
Cost attribution	Two staged approach for: - capital charges - telecom - estates - domestic services - finance department 7% uplift to specialty costs for general (remote) overheads	Two staged approach for: - capital charges - estates - general overhead No % uplift to specialty costs for remote overheads, but many support service costs apportioned direct to specialties.
Cost analysis	Locally determined: -fixed -semi fixed -variable	None undertaken
Cost type	Capital charges Revenue expenditure	Capital charges Revenue expenditure
Contract categories	DHAs - specialties GPFHs - procedures ECRs - banded procedures (major intermediate and minor)	All purchasers - GPFH procedures priced separately with remainder of work at average specialty price

The Thereabouts Unit used a framework of cost flows which attributed all general overheads through service departments except for personnel and telephone costs which were added as a percentage uplift to gross specialty costs. However, a further 10% in the form of support service costs were attributed directly to specialties/ contract categories on various apportionment bases e.g. domestic and portering costs were not fed through patient treatment services

Neither provider therefore undertook the costing for contracting in the manner later set out by the NHSME guidance: St Somewhere and Thereabouts did not build up the full cost of patient treatment service departments, St Somewhere only attributed four categories of overhead whereas Thereabouts attributed most overheads but often attributed support service costs directly to

specialties. Obviously, different methods of cost attribution will affect the prices derived.

Cost analysis

The St Somewhere Trust had developed a system of cost analysis in recent years, costs were analysed as fixed, semi-variable and variable. The analysis was based on local understanding of cost behaviour: 12% of hospital expenditure was classified as variable, 51% semi-variable and 37% as fixed. Most non-staff costs were included as variable with the exception of maintenance contracts which were regarded as fixed; staff costs were regarded as semi-variable or fixed. The Thereabouts Unit did not include any analysis of costs by behaviour.

Cost type

Costs were classified at both providers according to whether they related to capital charges (depreciation and interest) or revenue expenditure. The costs were not classified as overhead, indirect and direct as later stipulated in the NHSME Guidance.

Contract Categories

The St Somewhere Trust compiled costs by specialty. These were used for specialty prices for DHA purchasers and adapted using information from an earlier bottom-up costing exercise for GPFH procedures. ECRs were priced by classifying procedures into bands i.e. major, intermediate and minor (based on BUPA groupings).

The Thereabouts Unit compiled costs by specialty. These were used to compile GPFH procedure prices using specialty in-patient day with some bottom-up costing for theatre costs and prostheses. The GPFH procedure prices were used for all purchasers. Thus a tonsillectomy would be charged at the same price under a DHA contract, a GPFH contract or as an ECR. A DHA contract would also include work priced at average specialty cost for the remaining (i.e. non - GPFH) procedures.

Costing Software

At St Somewhere the prices were derived using a software package SAPPS (Specialty and Procedure Pricing System) into which towards 3,000 budget lines were entered. This system is used by over 100 units/trusts (NHSME 1993a). The system uses a relational database for calculating costs using the "top down" approach. The Thereabouts Unit derived costs and prices from the Unit's budget summaries using Lotus spreadsheets.

1993/94 Prices

The resultant prices (Appendix P) differed markedly between the two providers. A dermatology in-patient stay is £1,998 at the Trust compared with £2,823 at the Unit, but an in-patient stay in paediatric medicine is £988 at the Trust compared with £496 at the Unit. The two providers were often difficult to compare as they identified treatments in different ways, for example:

- the Trust priced a General Medicine in-patient at £1,051 on its ECR price list, the Unit charged £776 but this excluded the intensive therapy unit (ITU) or the coronary care unit (CCU). Not all General Medicine cases would require a stay in ITU and/ or CCU and therefore it is impossible to compare prices specifically.
- the Trust priced a tonsillectomy on its GPFH price list as £686 for an in-patient stay and £154 for a day case, but on its ECR tariffs a tonsillectomy was priced at £568; for the Unit the charge was £646 (in-patient only) for all purchasers. The differing prices charged for tonsillectomy at St Somewhere obviously relate to the differing approaches adopted for costing each form of contract or ECR tariff, a patient would receive the same treatment whether referred under a DHA contract, by a GPFH or as an ECR; apart from the separation of in-patient and day case treatment the variations provide no indication of relative efficiency.

The two providers are unlikely to be in direct competition because of their locations, however, it would appear that purchasers in the market could have

considerable difficulty in ensuring that they were comparing like with like even before quality and outcome factors are considered.

8.4 Costing for Pricing 1994/95 Contracts

In early summer 1993, both providers reviewed their approach to costing for contracting in the light of the NHSME guidance. Despite the obvious differences in approach, both providers felt that they were already in line with the overall thrust of the guidance in terms of cost attribution: they had used a staged approach for some overhead/ support costs and had used apportionment bases at or above the specified minimum. Both providers had used numerous apportionment bases for attributing indirect and overhead budgets, the variations from the guidance were considered minor e.g. using building area rather than volume for attributing estate utility costs; and attributing employee service costs through a percentage uplift rather than apportioning on staff numbers. However, in the 1994 questionnaire, both St Somewhere Trust and Thereabouts Unit regarded the revision of the costing approach to be substantial.

The Director of Finance and Contracting at St Somewhere regarded 'ownership' of the costing data and resultant prices as being of prime importance. He wished to be able to produce 'trading accounts' for each directorate. This required the contract income to be assigned to directorates and the assignment of costs according to their recovery through contracts. This requirement together with the NHSME requirements led to the following coding matrix being prescribed to link cost analysis with budgetary control.

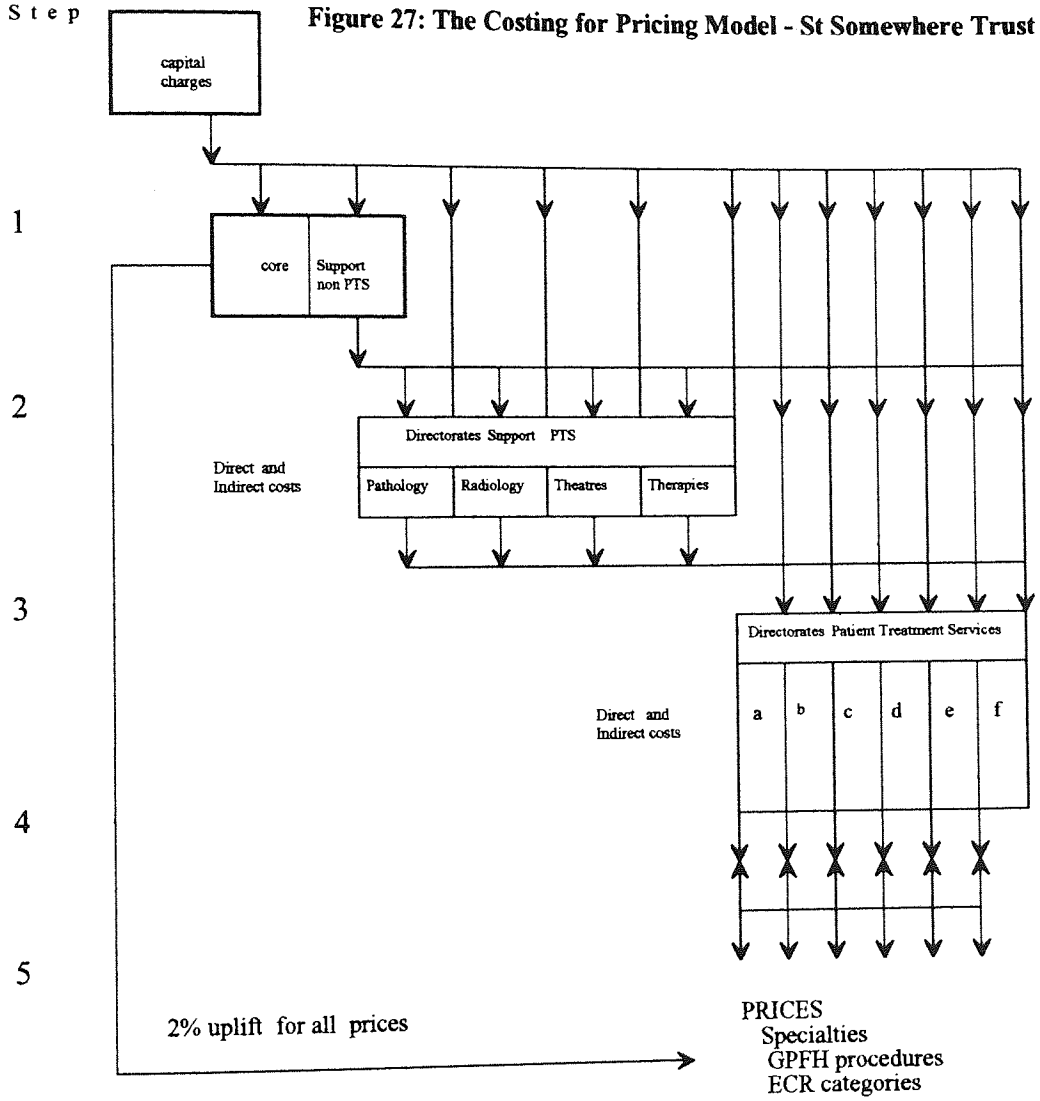
Figure 26:

Cost Analysis and Control: Coding Matrix- St Somewhere Trust

	Managed and Recovered in Directorate's Prices			Managed, not Recovered in Directorate's Prices			Not Managed, Recovered in Directorate's Prices		
	Direct	Indirect	O'head	Direct	Indirect	O'head	Direct	Indirect	O'head
Fixed									
Semi-fixed									
Variable									

The St Somewhere Trust embarked on a five stage approach to costing for 1994/95 contracts using the SAPP system, Figure 27.

Figure 27: The Costing for Pricing Model - St Somewhere Trust



STEPS

1 Capital charges allocated and apportioned to departments

2 Non treatment departments apportioned to clinical directorates

3 Support directorates apportioned to user directorates and direct access

4 User directorates cross charge for services between directorates

5 User directorates assigned to contract categories and uplift for core services

KEY
User Directorates:
a Womens and Childrens
b Orthopaedics
c Cardiac
d Surgery
e Medicine
f Radiotherapy

The new approach was influenced partly by the guidance which required a two staged approach feeding all costs through patient treatment departments as a minimum. However, a major influence on the approach was the need to improve "ownership" of the pricing data at (clinical) directorate level and to enable contract income to be compared with budgets at directorate level. The result was a move towards NHSME uniform approach, for example, reducing the overheads not fed through patient treatment services to a very small percentage. On the other hand, the new approach did not ensure that the full costs of theatres and other treatment areas were available to facilitate development of costing on contract categories below specialty, this was not seen as necessary 'we do not price at that level'. The new approach was very cumbersome and detailed, with little relation to the 57 uniform expenditure heads set out in the Costing Manual.

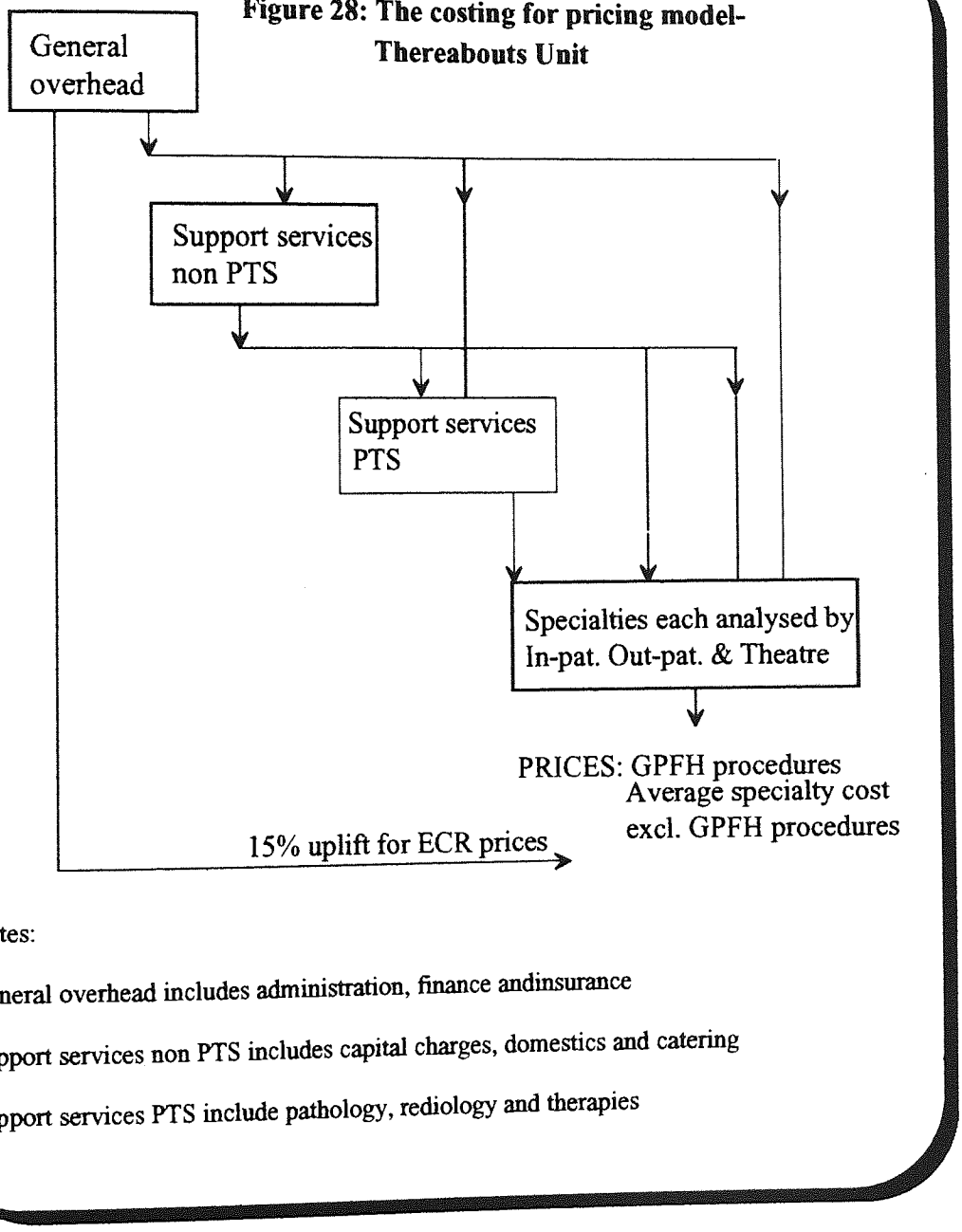
The Financial Controller at the Thereabouts Unit prepared two papers for business managers and clinical directors in July 1993: one making price comparisons of 1993/94 prices with neighbouring provider units and one proposing a costing for pricing strategy for 1994/95. The former paper concluded that Thereabouts Unit was competitive on average specialty prices but above average for GPFH procedures. The second paper proposed establishing prices in the same manner as previously (i.e. same product lines), but to include the additional analysis and classification set out by the NHSME. After discussion with senior managers, this strategy was adopted subject to:

> "The need to possibly correct any GPFH procedure prices which are at variance with the average.
> The possibility of charging a higher rate for emergency cases."
> (Senior Managers Meeting 18/8/93)/

The Thereabouts Unit had recently introduced the KPMG case-mix system and resolved to use the costing module within it (the spreadsheet approach of previous years was regarded as "too cumbersome to meet the requirements of EL(93)26"). The cost framework would attribute all overhead and indirect costs through patient treatment services except for those where direct to specialties was identified as a suitable method in the Manual e.g. catering.

Few modifications to apportionment bases were envisaged. The 1994/95 cost framework is shown in Figure 28.

Figure 28: The costing for pricing model- Thereabouts Unit



Notes:

General overhead includes administration, finance andinsurance

Support services non PTS includes capital charges, domestics and catering

Support services PTS include pathology, rediology and therapies

The Trust specified budget cost centres and budget lines in the costing system, the Unit used cost centres but broke centres down if considered significant for cost attribution. Both providers therefore input cost data in much more detail than broad TFR/ FR headings, especially the Trust. Neither provider translated their budgets into TFR1/ HFR21 nationally recognised categories as required in the Costing Manual. The accountants at both

providers had automatically worked from budget lines or summaries as previously, but felt that it would not have materially affected the results anyway , as the accountant at Thereabouts put it -

> "I would have had to have broken them down again to attribute the costs accurately".

Cost analysis and classification

The analysis of costs by type (overhead, indirect and direct) was a new requirement for both providers. The classification of costs into fixed, semi-fixed and variable categories was a further new requirement at the Unit. The results are summarised in Table W.

Table W: Cost Analysis and Classification 1994/95 (Case studies)

CASE STUDY	ST SOMEWHERE TRUST		THEREABOUTS UNIT	
COST ANALYSIS	**AVERAGE ALL SPECIALTIES**	**RANGE BY SPECIALTY***	**AVERAGE ALL SPECIALTIES**	**RANGE BY SPECIALTY#**
Direct	55	93 - 37	50	63 - 44
Indirect	43	63 - 5	20	26 - 11
Overhead	2	Constant	30	35 - 25
COST CLASSIFICATION				
Variable	15	36- 7	8	9 - 3
Semi-fixed	67	73 - 5	64	75 - 60
Fixed	18	59 - 13	28	31 - 19

* excluding regional specialties

in-patient element only

The cost analysis and classification is shown by individual specialty in Appendix Q.

It is evident that the case study sites have not been consistent in the application of the guidance. The Trust used the overhead category to include only very remote overheads added as a percentage uplift to gross specialty costs (i.e. a constant 2% uplift). The Thereabouts Unit applied the guidance rigidly and therefore included maintenance, heating and utilities and administration within this category. The accountant said -

> "I followed the guidance rigidly, but put no extra thought into it as I do not expect to ever use it! The consultant pathologist went down as per the guidance as 'fixed' and 'direct'."

The identification of items as direct, indirect and overhead was difficult because of the ambiguity surrounding what this identification is in relation to, the guidance merely highlights the different interpretations (see section 7.6). Multi specialty wards were particularly problematic in this respect. Although both case studies had the majority of their costs analysed as direct, this does not mean that they were direct costs of the specialties. Many were direct costs of individual departments (e.g. pathology), but these costs were then apportioned to specialties. A number of grey areas were found in addition to multi specialty wards, but were not subject to rigorous consideration because of the little value placed on the information.

The budget data did not always lend itself to the current subjective analysis headings (from the Annual Accounts) used in the guidance. The later version of the guidance included in the costing manual adds that the classification and cost analysis given

> "oversimplifies the classification in some areas. Where providers are able, they should analyse costs at a lower level to improve the classification/ analysis achieved" p10 NHSME 1993c.

The accountants at both providers saw little value in the classification/ analysis although both undertook the work from a lower level because of the budget input used. At the Trust, the classification of costs into fixed, semi-fixed and variable was often influenced by their earlier approach. For example, maintenance contracts continued to be classed as 'fixed' despite the guidance stipulating semi-fixed most of the other non staff expenditure was regarded as variable. The accountants at both providers would not use the analysis for any decisions - "at best, it might be a rough starting point". Thereabouts Unit had a higher proportion of its costs classified as fixed and proportionately more overhead cost, however, this would appear largely due to differing approaches to the classification and analysis rather than true differences in cost structure.

Apportionment bases

The 1993 Guidance stipulated minimum standards for apportionment basis (Appendix O). Both case studies attributed costs in far greater detail than the

57 headings used in the Guidance. St Somewhere, initially at least, asked departmental managers to assess how the costs of their department should be attributed to specialties (Appendix R), Thereabouts Unit used apportionment bases similar to those stipulated in the Guidance but often used a number of different bases for each department, for example building and engineering maintenance expenditure was analysed by different classes of staff and then attributed according to time data from planned preventative maintenance schemes, emergency work etc. Frequently, more than one apportionment base per department was applied.

1994/95 Costing 'product lines' for pricing

St. Somewhere Trust compiled cost-based prices in a different manner for each type of purchaser (Appendix S).

- DHA purchasers (St Somewhere)

Cost-based prices were compiled using average specialty cost per FCE (finished consultant episode) and per out-patient attendance. These were derived by dividing the specialty costs calculated through the costing model by the expected 1994/95 activity.

- GPFHs (St Somewhere)

Procedure prices for GPFHs were largely obtained by deriving the specialty cost per in-patient day and multiplying by the average length of stay for each procedure. Adjustments were made based on earlier costing exercises for theatre time and high cost items such as prostheses. The costing exercises also formed the basis for day case procedure prices. However, these adjustments were not systematic as theatres and high cost items had not been identified separately in the costing model.

- ECRs (St Somewhere)

Average specialty cost per FCE was utilised for most specialties, but prices were compiled at a lower level for general surgery, urology, ENT and gynaecology. Within these specialties, high activity (or possibly high cost) procedures were priced on the basis of previous costing studies: in ophthalmology the previous bottom-up exercise had covered most

ophthalmology procedures; in gynaecology, urology and ENT a small number of procedures were priced separately with the remaining procedures being grouped into bands (minor; intermediate and major); in general surgery all procedures were grouped and two further bands used (major plus and complex). In orthopaedics, hip and knee replacements were costed separately, but the remainder were on average specialty. Day cases and out-patients were priced on specialty.

At Thereabouts Unit, consistency was maintained between purchasers (apart from the addition of an extra 15% if the work related to an ECR). For each specialty, costs had been attributed to theatres; high cost items (prostheses etc.) general (ward costs etc.); day cases and out-patients. Prices were then compiled as follows:

- For each GPFH procedure (all purchasers)

The cost per specialty in-patient day was multiplied by the ALOS(or if appropriate a day case rate was used). To this was added the theatre cost (theatre time multiplied by theatre rate) and the cost of any high cost items.

For example, in ophthalmology, a cataract was priced as follows:

1.9 days @ £193 per day	= £366.7
55 mins in theatre @ £8.79 per min	= £483.45
High cost items	= -
Price	£850

- Average specialty price (excluding GPFH procedures)

The balance of specialty costs for in-patient and day case treatments (i.e. total less cost of GPFH procedures) was divided through by the remaining activity to derive the balance average price for other procedures on an in-patient or day case basis.

- Out patients

Out patients were priced separately for each specialty according to whether: a procedure is to be undertaken at the attendance; it is a first attendance; or a follow up attendance. These three types of out-patient attendance were weighted 3:2:1 respectively based on a subjective assessment of the time for

each type of assessment. The total specialty cost for outpatients is then divided by the weighted attendances to derive the cost for each type of attendance.

For example, in ophthalmology, the total out-patient cost is £478,748

	Estimated attendances		Weighted attendances
procedure	347 * 3	=	1,041
first	1,787 * 2	=	3,574
follow-up	11,483* 1	=	11,483
	total		16,098

£478,748/ 16098 = £30

Price per attendance:	procedure	£90
	first	£60
	follow-up	£30

There was therefore consistency in pricing between purchasers from Thereabouts, the unit generally priced a lower level of service definition than St Somewhere for DHA purchasers. The 1994/95 prices for St Somewhere and Thereabouts are set out in Appendix S. Standard contract categories for at least one specialty (orthopaedics, ophthalmology and gynaecology) are expected to be costed and used by all providers 'to inform contracts for 1995/96' (NHSME 1994a), but it will be much longer before standard contract categories are generally used for all specialties.

Table X summarises the costing and pricing approach for 1994/95 contracts.

8.5 Comparison of the 'published' prices

The two cases used different definitions of service ('product lines') for pricing purposes and at St Somewhere there was a different pricing system for different types of purchaser. Hence meaningful price comparisons are often difficult, indeed if price depends on the type of purchaser, rather than the service provided - prices surely cannot provide appropriate 'efficiency' signals. Some broad comparisons from the prices in Appendix S are made below.

Table X: Costing for Pricing 1994/95 Contracts - case studies

	St Somewhere Trust	Thereabouts Unit
Cost attribution	Multi - staged approach, except for 2% uplift to specialty costs for general (remote) overheads	Two staged approach. No % uplift to specialty costs for remote overheads, some support service costs (as permitted under NHSME guidance) apportioned direct to specialties.
Cost analysis	Influenced by previous system. -fixed -semi fixed -variable Did not translate budgets into uniform categories	Followed NHSME guidance, but did not translate budgets into uniform categories.
Cost type	-Overhead -Indirect -Direct (and Capital charges) Local interpretation especially regarding overhead.	-Overhead -Indirect -Direct (and Capital charges) Followed NHSME guidance, but did not translate budgets into uniform categories.
Contract categories	DHAs - specialties GPFHs - procedures ECRs - banded procedures (major intermediate and minor)	All purchasers with contracts - GPFH procedures priced separately with remainder of work at average specialty price. 15% on above prices for ECRs

Table Y provides comparisons of:

(i) average specialty prices used for DHAs (some specialties are excluded as average specialty prices were not published);

(ii) the cost analysis and classification of the above specialties; and

(iii) some procedure prices and their associated average length of stay.

Table Y: Case studies - price and cost analysis comparisons 1994/95

(i) Average specialty prices

	In-patient FCE £		Day Cases £	
Specialty	**St Somewhere[1]**	**Thereabouts[2]**	**St Somewhere[1]**	**Thereabouts[2]**
General surgery	1140	868	175	265
Oral surgery	806	660	510	385
Paediatrics	944	624	-	260
ENT	787	1236	165	300
Gynaecology	687	346	227	233
Obstetrics	649	704	-	-
SCBU	1192	3484	-	-

Notes:[1] all procedures [2] excluding 97 GPFH procedures

(ii) Cost classification and analysis

	Cost Classification Variable:Semi-fixed:Fixed %		Cost Analysis Direct:Indirect:Overhead %	
Specialty	**St Somewhere**	**Thereabouts**	**St Somewhere**	**Thereabouts**
General surgery	17 -66 -17	23 - 68 - 9	40 - 58 -2	48 - 24 - 28
Oral surgery	59 - 5 -36	26 - 67 - 7	35 - 63 -2	55 -17 - 28
Paediatrics	13 -78 - 9	24 - 69 - 7	46 - 52 -2	60 - 14 -26
ENT	27 -56 -17	29 - 68 - 3	44- 54 - 2	58 - 9 -33
Gynaecology	13 -72 -15	31 - 61 - 8	37 - 61 - 2	48 - 18- 34
Obstetrics	20 -73 - 7	19 - 75 - 6	58 - 40 - 2	63 - 12 - 25
SCBU	not available	25 - 70 - 5	93 - 5 - 2	63 - 11 - 26

(iii) Selected procedure prices and Average length of stay (ALOS)

Specialty	Procedure	St Somewhere		Thereabouts	
		Price £	ALOS	Price £	ALOS
Ophthalmology	Glaucoma	1,272 to 1,336	4	785	2.7
	Cataract	1,179 to 1,215	3	850	1.9
	Corneal	1,537	4	1,426	4.2
Gynaecology	D and C	341	1.34	312	1
	Hysterectomy	1,324	7	1,248	7.1
Orthopaedics	Hip	Total 4,465 Revision 6,623	17 16	Single 2,656 Both 3,783	10 10
	Knee	Total 6,116 Revision 7,781	17 18	Single 2,756 Both 3,983	10 10

The average specialty prices, (Table Y(i)), show St Somewhere to be relatively expensive for general surgery in-patient FCEs (though not day cases); oral surgery; paediatrics and gynaecology. On the other hand,

Thereabouts is more expensive for ENT and obstetrics, and the special care baby unit (SCBU) is three times more expensive.

The cost classification and analysis provided by the two case studies (Table Y(ii)) sheds little light on these variations. With the exception of oral surgery, Thereabouts consistently classified more expenditure as variable; St Somewhere consistently used the overhead classification merely for the 2% on cost for core management costs and classified the bulk of its costs as indirect. However, the SCBU at St Somewhere bears very little non direct costs i.e. 7% compared with 37% at Thereabouts.

Specialty prices between the two providers may consist of markedly different case-mix. Indeed, the above comparisons will certainly be distorted by case-mix variations as Thereabouts removes the GPFH procedures from the specialty cost and calculates a specialty price for the balance. The GPFH procedure prices for the two providers are detailed in Appendix S. Taking the procedures by specialty grouping the following observations can be made:

Ophthalmology. All ophthalmology procedures are cheaper at Thereabouts Unit on either an in-patient or a day case basis. Thereabouts also has a shorter length of stay for those procedures where data is provided.

ENT This specialty is much more expensive at Thereabouts. Thereabouts has a higher day rate, for example 'lesion of nasal mucosa' is £166 as a day case at St Somewhere compared with £310 at St Somewhere. St Somewhere also has greater availability of day case treatment: tonsillectomy; adenoidectomy and pharyngoscopy are all only available on a day-case basis at St Somewhere, but require an in-patient stay at Thereabouts. Indeed, a pharyngoscopy requires an average in-patient stay of 2.6 days at Thereabouts. Thereabouts also has longer stays for in-patient procedures e.g. polypectomy requires 1.95 days at St Somewhere compared with 2.3 at Therabouts.

General surgery Day cases and in-patient procedures are priced higher at Thereabouts (despite cost shifting detailed in 8.6).

Urology in-patient procedures are cheaper at Thereabouts, but day case treatment is higher (but see 8.6 below).

Gynaecology in-patient procedures are more expensive at Thereabouts despite similar lengths of stay (and some cost-shifting, 8.6). Day cases are also more expensive, often twice as expensive (e.g. patency test, D and C, bartholin's cyst).

Orthopaedics

Price comparisons between the two providers show no general pattern apart from day case treatment being more expensive at Thereabouts. Some procedures are vastly more expensive at Thereabouts (e.g. Trigger finger £330 at St Somewhere and £888 at Thereabouts), but others are much cheaper at Thereabouts (e.g. puncture of joint intra articular aspiration £1, 047 at St Somewhere and £395 at Thereabouts). Even at GPFH procedure level comparisons are difficult as the providers subdivide procedures in different ways (see Table Y (iii)). It would appear that the two providers may have quite different treatment regimes in this specialty.

Examining the cost analysis and classification of the two providers by specialty adds little to the above comparisons.

For the 1995/96 contracting process all providers have been instructed to cost healthcare resource groups (HRGs) in either ophthalmology; gynaecology or orthopaedics (NHS Executive 1994a). Both providers already price some of these procedures separately for non GPFHs, these are compared together with the associated ALOS (average length of stay) in Table Y(iii). The ALOS appears to be a much more meaningful indicator of price (and efficiency) differences than information derived from the NHSME prescribed cost analysis and classification, moreover it can be related appropriately to a clearly defined level of service i.e. a treatment procedure.

8.6 Cost-shifting or price manipulation

At both providers, the cost-based prices were subject to some manipulation or massaging after compilation of draft prices.

St Somewhere

At St Somewhere, the Director of Finance and Contracting examined the effect of the initial prices on purchasers: DHA and GPFHs.

- DHAs

  When it was found that the host DHA would be asked to pay 10% more for the same activity as the previous year, adjustments were made - when the prices were issued, no individual DHA was expected to pay more than 1% above 1993/94 contract income (before inflation adjustments). The DHAs receive their moneys on a weighted capitation basis and must live within their allocation. If St Somewhere had increased the charge for work performed for its host DHA, the DHA would have had to reduce the level of work purchased, St Somewhere would find it extremely difficult to maintain its activity levels through increased work from more distant DHAs even if their contract prices had reduced. This form of action would explain why few variations in purchaser contract income were reported by providers in the survey despite the majority stating that the NHSME's guidance had required substantial changes to their costing for pricing systems.

- GPFHs

  The 1993/94 GPFH contracts were on a cost per case basis, in order to encourage existing GPFHs and fourth wave GPFHs to commence cost and volume contracts, a sliding scale of prices (Table Z) has been introduced.

Table Z:

St Somewhere Trust - Sliding Scale of Prices for GP fundholders

% of 1993/94 activity committed	% of published GPFH prices
No committed level	100
50% > 80% of budgeted activity	90
80% > 100% of budgeted activity	60
100% or over	30

The break-even position is calculated to be at 103% of budgeted activity. Therefore if GPFHs do not refer patients to St Somewhere as planned,

there will be an under-recovery of cost on GPFH procedures, some cross-subsidisation will arise according to the level of contract placed both between GPFHs and between GPFHs as a whole and DHAs. However, it is apparent that cross-subsidies between different types of purchaser would have arisen even without such sliding scales as GPFHs contract for work using different contract categories from DHAs i.e. procedures as opposed to average specialty or banded procedures.

Thereabouts Unit

The Thereabouts Unit had declared at the outset of the costing process that GPFH prices were to be competitive. The Financial Controller issued the draft prices on 5th November at a senior managers meeting. Discussions ensued on the following service prices:

- Surgery and Urology

  The surgery consultants asked that prices be kept to last year's level, this was achieved by adjusting the draft cost-based price. For example:

GPFH procedure 54: Ingrowing toenail	£
2 days @ £137	274
17 mins theatre @ £8.15	138.55
Total cost	413
Adjustment to 1993/94 price	(138)
Published price 1994/95	275

  Thus the published price for this procedure was two-thirds of cost.

  This manipulation was undertaken on the vast majority of surgery procedures with a compensating effect on average surgery prices for non GPFH procedures. The adjustments are detailed in Appendix T. The Appendix also shows that prices for out-patient procedures were contrived to be below 1993/94 levels.

- Gynaecology

  Prices for GPFH procedures were adjusted, as above, to keep them competitive.

- Paediatrics

  Prices were 26% higher than in 1993/94, but this was considered justified as a new paediatrics ward had been opened. (Paediatrics in 1994/95 were only 66% of the price at St Somewhere).

- General Medicine and Age Care

  The price of general medicine had reduced from 1993/94 but age care had risen. The General Manager suggested pricing as one product line and cross-subsidising. The business manager for the directorate consulted with the clinicians who decided that they wished to continue to price separately, however, within general medicine some out-patient cost was shifted to in-patient as the our-patient cost was higher than the previous year.

Both providers adjusted their cost-based pricing significantly, however, both felt that the cost-shifting would not be detected by the auditors or, even if it was, that it could be justified. Even though the NHS Executive stipulates cost assignment in some detail, it is difficult to query cost attribution by on-the-spot managers, also whilst cost attribution may be prescribed, there appears little guidance or control over the estimated activity or workload used in the costing models although these have an important impact on cost-based prices.

8.7 Conclusions

The case studies have shown how marked differences in costing approaches for pricing contracts remain. A number of factors influence the costing and pricing process which reduce the impact of the NHSME's endeavours to achieve uniform approaches to costing and pricing. Information needed for budgetary control and decision-making inevitably take precedence over "guidance" set down by a remote Executive. Lack of consistency in both the costing process and how those costs are compiled into product lines will make comparative efficiency very difficult to assess. Price comparisons at present are fraught with difficulties. Often the service is so broadly defined or not defined consistently by providers and therefore comparisons are not meaningful or even possible. The cost analysis and classification, as

implemented, is unhelpful. Basic data regarding length of stay and outcomes seem much more reliable and relevant than inconsistent cost data. Price variances may still be due to differing cost approaches and indeed the instances of cost shifting highlighted question the basic premise that individual prices actually reflect cost. Cost-based prices are adjusted according to 'market conditions' - competitor prices and the ability of purchasers to pay.

Chapter Nine

CONTRACT NEGOTIATION AND THE EMERGING MARKET

9.1 Introduction

This chapter considers contract negotiation in the two cases and the emerging NHS internal market. Firstly, the contract negotiation process is followed and the level of 'openness' in costing and pricing is established. The latter part uses the findings from the cases and the surveys to provide an analysis of the emerging NHS internal market in the context of the cost-based pricing rules.

9.2 Contract negotiation

Each provider was required to submit their prices to the regional health authority by 12 November, 1993. The contract negotiation with purchasers (DHAs and GPFHs) was undertaken in the ensuing months.

St Somewhere Trust

At St Somewhere, the contracts are negotiated with the purchasers by a team: the Director of Finance and Contracting; Director of Marketing and Contracting; and the Director of Information and Corporate Planning, The clinical directors and business managers are not in attendance at contract negotiation meetings (except for the host DHA), but they are consulted on any changes to the contracts from the previous year and their agreement is required before contracts are finalised. Quality aspects are discussed, though often separate meetings are used to discuss the issues more fully.

The prices were calculated using 1993/94 activity. As contracts are negotiated, analysis is undertaken showing movements from the baseline in terms of both activity and revenue. The movements are further analysed according to whether they relate to additional emergency work; switch from in-patient to day case work and 'equilibrium' i.e. activity necessary to maintain waiting time targets. Changes to the base activity level do not give rise to recalculation of prices through the costing and pricing model. Each purchaser is allowed 2.25% additional activity at no extra cost as part of the Government's efficiency targets. Generally, other adjustments in activity would be negotiated at 30% of full cost/ price. The Trust has continued with this

procedures. The existence of fixed costs (which are largely joint costs of procedures within a specialty) made the loss of part of the business disadvantageous to Thereabouts. Thereabouts was therefore unable to negotiate a contract with this DHA. The DHA accounts for about 5% of Thereabouts total workload. This situation prompted Thereabouts to introduce an additional 15% charge for extra contractual referrals (ECRs), Thereabouts argues that this represents the additional transaction cost associated with such referrals.

The host HA received a large increase in funding for 1994/95 due to a change in the formula used. The resultant additional work undertaken for the host HA will be treated as an additional contract "to relieve waiting lists etc." and negotiated after the start of the year. By using this mechanism, the host HA will gain maximum benefit from the additional funds (if the costing model was rerun with the additional workload, the other purchasers would receive some of the gain from the spreading of the hospitals' fixed cost over a greater volume). A separate marginal costing exercise will be undertaken to cost the extra work for the host HA, the 45% used in earlier years and for other purchasers in 1994/95, is regarded as inadequate. Similarly, the cost analysis calculated under the NHSME guidance (variable, semi-fixed and fixed) is regarded as not sufficiently robust, especially as the host HA is likely to request a 10% increase in their activity above the original pricing model.

Openness in costing and pricing

Despite having analysed and classified costs according to NHSME guidance (direct, indirect and overhead; and variable, semi-fixed and fixed) this information was not made routinely available to purchasers by either case study provider.

The Thereabouts Unit provided extensive analysis of its budgets to its host DHA, but was not asked for the analysis and classification of costs under the NHSME guidance. The St Somewhere Trust provided the analysis and classification to its host purchaser towards the end of the contract negotiations. Both providers expressed a willingness to provide the

information if requested. However, neither provider appeared to utilise the information in contract negotiations

St Somewhere Trust provided the following information to purchasers:

- Prices by average specialty for DHAs, by GPFH procedure for GPFHs;
- Existing purchasers received a contract analysis by specialty;
- GPFHs receive a marketing brochure and are informed via a bi-monthly newsletter of waiting times and lists by consultant.

The host DHA is issued information building up the Trust's total quantum of cost together with a purchaser summary, (this is available to others if requested.)

Thereabouts Unit distributed the following information to purchasers:

- Prices by GPFH procedure for all purchasers, and for DHAs the remaining workload by average specialty cost for that workload;
- A standard booklet on facilities and staff;
- Contract monitoring report detailing base activity, budget and waiting list.

Extensive further information is issued to the host DHA -

"They go through the Unit's quantum of cost with a fine toothcomb!"

As the Thereabouts was directly managed by its host DHA until 1 April 1994, there had been considerable debate about the distribution of the costs of the DHA which related to the provider rather than to its purchasing role.

In the NHS internal market model, openness in costing was seen as providing a stimulus to provider efficiency (section 3.3). Such openness would enable contract negotiators to spot potential abuse of monopoly and monopsony power and to highlight the existence of differences in efficiency (DoH 1989e). However, to make meaningful assessments of cost some uniformity of approach is required. Openness in costing is less meaningful without some consistency in terms of the contract category or product line.

The standard classification and analysis of costs by behaviour and type are not easily applied consistently and are extremely broad classifications. Both the 1994 survey and the case studies show that the classification and analysis was subject to differing interpretation. Furthermore, disclosure is not obligatory and the NHSME's existing stance on openness is ambivalent. The NHSME states in the foreword to the costing manual, it "feels strongly that there is a need for greater openness in contracting between purchasers and providers than currently characterises the contracting process", but then in the

guidance documentation goes on to scramble the cost data from the pilot site "so as not to reveal detailed costing data confidential to the pilot study unit"! Openness in costing appears patchy, information is more likely to be provided to the host purchaser, but at present, little demand for the NHSME standard information is apparent. Negotiations centre on the total contract value rather than individual prices or cost structure.

Contracting Timetable

Contract negotiation is mainly undertaken in the January to March preceding the financial year. DHAs appear unwilling to commence contract negotiations earlier, presumably because of uncertainty surrounding the funds available to them. In February 1994, fourth wave GPFHs (i.e. GP practices becoming fund-holders on 1 April 1994) received draft budget proposals and there was uncertainty surrounding earlier waves because of changes in their funding, consequently the amount of deduction from the DHAs' budget was also uncertain.

The NHSME Directive states that all contracts should be signed before the start of the financial year. At 31 March 1994, both case study providers had a significant part of their anticipated contracts for 1994/95 still to be agreed. At St Somewhere Trust, 72% of anticipated contract income had been agreed, but GPFH contracts (6%) and contracts for regional specialty work (20%) were still outstanding. At Thereabouts Unit approximately 78% of anticipated contract income had been agreed, but contracts with GPFHs and some DHAs were outstanding. Indeed, Thereabouts Unit had never finalised the 1993/94 contract with its second largest purchaser (10% of contract income). However, there is a three year contract in operation with this purchaser which guarantees a minimum of £2.24m per annum before inflation adjustments.

The Audit Commission(1993), have noted the general problem that contracts remain unsigned well into the financial year -

> "A vicious circle of uncertainty can sometimes develop with providers unwilling to quote prices until they know precisely what level of work to expect, and purchasers unable to commit themselves to a level of activity until they have prices from each provider."

9.3 The emerging NHS internal market

Cost-based pricing in the internal market model

Quasi or internal markets operate via a price mechanism. The NHS internal market was clearly established to improve the efficiency of the NHS. It has been shown (Chapter 2) that if perfect competition, or perfect contestability existed, these efficiency aims could be achieved without price regulation. Competition would be real, purchasers would use alternative (potential) suppliers if prices were above the efficient level. However, at least in the early years, the NHS internal market could be subject to abuse by monopoly providers not operating in a contestable market. The DoH's chosen price mechanism, i.e. full cost pricing including a 6% real return on the current replacement cost of capital and no planned cross-subsidisation, sought to imitate the 'ideal hospital market' (DoH, 1989e). Prices were to be based on LRAC which, as the DoH argue there are no economies of scale in district general hospitals with more than 600 beds, will generally equate to LRMC. To prevent the abuse of monopoly power through cost-enhancing inefficiency, openness in costing was seen as necessary to provide yardstick competition where real competition could not occur. The abuse of monopoly power, it was envisaged, would also be curbed by monopsony power (Bryan and Beech, 1991).

Market structure

The NHS internal market is very diverse. The surveys and the case studies have highlighted diversity relating to geography and product (Figure 29).

Very few acute healthcare services have any resemblence to the perfect competition model of many buyers and sellers. The market for GPFH procedures (particularly in the large conurbations) would be the closest, in this market providers would largely be price takers. In both case studies pressure to keep GPFH prices competitive was experienced, but this did not lead to pricing at LRAC, hospitals are multi-product providers. The case studies and surveys have shown that the cost-based pricing rules are difficult to apply meaningfully and can easily be manipulated. There is evidence of

cross-subsidisation between products and purchasers. Whilst monopsony power may constrain providers (the strong influence of the host DHA was apparent in both case studies), it may also operate to the detriment of other, less-powerful purchasers. Where price competition did appear to exist, this did not necessarily lead to greater efficiency, but rather cost-shifting to other less competitive contracts.

Figure 29:

Degree of concentration, market structure and characteristics

	SEVERAL PROVIDERS	A FEW PROVIDERS	ONE PROVIDER
PRODUCT (Healthcare services)	Simple elective treatment i.e. reasonably homogeneous product (GPFH procedures)	More advanced elective treatment Emergency treatment in conurbations	Supra regional/ regional specialties Emergency and more advanced elective treatments outside conurbations
DIFFERENTIATION	Some differentiation by place, GP preference etc.	Differentiation of products	Differentiation of products
PURCHASERS	Many GPFHs and several DHAs	One or a few DHAs	One or a few DHAs
	PRICE TAKER ←----------→ PRICE MAKER		
	LOW ENTRY BARRIERS ←----------→ ENTRY BARRIERS		

The NHSME's rules impose a system of pricing contrary to the market structure for acute health services. This is not surprising, the rules were devised because of difficulties in ensuring competitive or contestable markets, however, in the emerging market, compliance with such rules will be difficult to enforce.

Transaction costs and the competitive market

Relating prices to activity is seen as fundamental in using market mechanisms to encourage economic efficiency, without it, purchasers cannot make rational choices between providers and providers will still be impeded in their attempts to become more efficient because of the 'efficiency trap' (section 3.2).

In 1991/92, many restrictions were placed on the operation of the internal market: contracts were to be on the whole block contracts and for DHAs,

(though not necessarily GPFHs), were to reflect existing referral patterns. According to the 1991 survey, 89% of hospital income was from block contracts; 8% from cost and volume contracts and 3% cost per case. In 1991, competition was only for GPFH work, which represented a small percentage of contract income. The vast majority of workload was provided according to historic patterns and funding was largely unrelated to changes in activity. The vulnerability of hospitals to future competition varied considerably. One hospital surveyed contracted with only 2 DHAs whilst at the other extreme, one hospital held contracts with 23 DHAs.

By 1994, some progress towards contracts related more closely to activity was apparent, but block contracts still accounted for 84% of contract income. Both case studies used block contracts with DHAs, such contracts accounted for 76% or 88% of total contract and ECR income.

The market's efficiency aims require purchasers to respond rationally to price information. The research has been conducted from the provider perspective. However, there are indications that purchasers are unable or unwilling to cope with more detailed contracting, (little demand for more sophisticated information, concern over total contract value rather than price per item etc.). As Ferlie et al (1993) observe more detailed contracting would have implications for transaction costs -

> "There is an expectation in the British system that the contracting system will progressively move from a block contract basis to cost and volume contracts and indeed cost per case contracts. Such a shift in the predominate mode of contracting would heavily increase the workload." p 71.

The considerable transaction costs may indicate the reluctance to pursue more detailed contracts. There was little incentive to use more sophisticated costing and pricing from either the purchaser or provider perspective. For the provider, more accurate costing is more expensive and it was unlikely to change the contract prices as these were related to competitive GPFH prices or the DHA ability to pay. From the purchaser perspective, more accurate costing is also more expensive (i.e. provider costs are recovered from purchasers) and as each host DHA is often purchasing the vast majority of its local provider's services, it has little to gain by reducing errors of

apportionment (though much to gain by reducing errors of magnitude). For both parties, transaction costs increase as contracts become more detailed both in terms of activity (i.e. movement from block to cost and volume or cost per case contracts) and product grouping (i.e. from broad specialty to defined procedures).

Purchasers' response to prices

The market's efficiency aims require purchasers to respond rationally to price information. The research has been conducted from the provider perspective, but it would appear that price is not a major factor influencing purchaser decisions. A NAHAT (1993) survey found that existing patient flows; GP expressed preference; previous experience of providers; and ease of travel for residents were all given greater weight in influencing decisions about where to place contracts in 1992/93 than competitive prices.

Application of the perfectly competitive market model

The number of providers and HA purchasers is decreasing. In 1991/92 a provider contracted on average with 10 HAs and 2 GPFHs. By 1994/95 many providers had merged (as had four purchasing authorities), but a provider on average contracted with 9 HAs (and 7 GPFHs). Thus in 1994 the market in the West Midlands consisted of fewer but bigger provider organisations and purchasers, the market was becoming more oligopolistic. Butler (1992) forewarns of such developments, there is-

> "a natural tendency for oligopolies to form in a market dominated by block contracts....(and this)...might be unnaturally enhanced by the providers themselves. Competition is not the inevitable consequence of a market environment: providers might seek to preserve their interests just as much by collaborating with each other as by engaging in competition." Butler (1992) p88.

Although many market proponents (e.g. Baumol et al) would argue that it is the threat of potential competition, rather than competition per se that is important, the dangers of monopolistic or oligopolistic behaviour would seem to be increasing and ensuring contestability must be increasingly difficult

(because of the heavy investment and specialist resources required) as the market becomes more concentrated.

The case studies provide evidence of monopsony power. For example, the cost shifting by purchaser undertaken at St Somewhere (section 8.6) which led to 1994/95 base contracts being within 1% of 1994/95 contracts; and the treatment of the host DHA's additional funding at Thereabouts. The little change in total contract value, as identified in the 1994 survey, for each DHA may also indicate similar relationships, given that most providers regarded the changes to their costing approach as substantial following the NHSME Guidance.

In practice, many markets are observed to operate not by the economist's 'invisible hand', but by what a former Chairman of the President's council of Economic Advisors in the US labelled the 'invisible handshake' (Okun 1981). By this, Okun means that routine and automatic price arrangements are often agreed upon in order to create continuity and convenience of supply, consequently prices become 'sticky' and do not directly reflect shifts in market conditions. This is what appears to be happening in the NHS internal market, the market is a set of oligopolies and oligopsonies in which inter-institutional bargaining is the central mechanism by which resources are allocated.

The case studies and to some extent the 1994 survey, have shown that the emerging NHS market(s) does not resemble the model espoused on the introduction of the NHS internal market i.e. purchasers observing the prices charged by several providers for a particular product and selecting the lowest price provider as the one with whom the purchaser will agree a contract. The picture is more akin to industry models where contracts are negotiated between a few buyers and sellers on terms that are not made known to other potential purchasers or providers. The prices are a start point for negotiations. Dawson (1994) draws the analogy with industries where product prices are posted (textiles, paper) -

> "Published price lists exist **either** for small buyers not sufficiently important for the supplier to cultivate, **or** as a starting point for price negotiation. Neither buyer nor seller has an interest in negotiated prices becoming public knowledge." p5 Dawson 1994.

Firms succeed by the (essentially non-competitive) relations they build. This also appears to be the reality of organisations in the present NHS internal market, purchasers are price negotiators, not price takers. In this environment attempts to establish meaningful cost-based pricing will be extremely difficult.

Alternative Modes of Governance

In chapter 2, the transactions cost approach was used to justify the use of non-market structures. In the NHS internal market, the pricing rules had been devised in an attempt to overcome problems relating to the abuse of monopoly power. However, markets may be inappropriate not just through failings evident in neo-classical economics. Markets and the price mechanism may be inefficient because of the existence of high transaction costs in operating the market. In situations that involve uncertainty, bounded rationality and opportunism, it is important to economise on resources used in negotiating, implementing and adapting contracts. This is what appears to be happening in the NHS internal market. To use Williamson's categories (section 2.7) high transaction costs result from:

- uncertainty. The unpredictable nature of healthcare (especially for non-elective work) means that cost per case contracts are very risky for both the purchaser and the provider. Under uncertainty contracts become very complex and costly to enforce. This would explain the continued reliance on block contracts after four years of the NHS internal market.
- bounded rationality. The extremely high level of detail necessary to place all contracts on a procedure basis, (there are nearly 500 HRGs and over 10,000 ICD9/OPCS codes), place limits on both purchasers and providers, but contracts at specialty level provide very imprecise service definition. Cost per case contracts at procedure level would be even more daunting.
- opportunistic behaviour. When services are only loosely defined within block contracts, there is scope for opportunistic behaviour e.g. a provider treating less complex cases or not providing care which leads to efficient outcomes. In order to overcome this, costly medical audit or performance review may be needed which again is costly and expensive to administer.

The problems are exacerbated by 'small numbers' and 'asset specificity'. The research has shown increasingly small numbers (with the exception of GPFHs) of purchasers and providers are operating in the NHS internal market. There are therefore few or no alternatives open for a buyer or a seller to replace each other in a transaction. The cost-shifting between purchasers at St Somewhere following the costing for pricing exercise could be regarded as indicative of the lack of alternative purchasers. Similarly, purchasers are locked in to providers because of asset specificity resulting from the geographic location, the loyalty of GPs to existing referral patterns etc. The high asset specificity leads to the parties being dependent on each other and the costs of switching contracts prohibitive. If the frequency of transactions is also high, the transactions cost approach expects vertical integration to take place.

High transaction costs appear to have impeded the development of the NHS internal market. The former mode of governance in the NHS was bureaucratic or according to Ouchi 'clan' mode. Within these governance structures, rules or traditions drive performance rather than prices. The developing internal market appears not to be mimicking the neo-classical model, but following the co-operative, network model. The NHS is more co-operative than competitive, and therefore to use Thompson's classification model (Figure 5 section 2.7), the move appears to have been from a clan form to a network structure, rather than from a bureaucracy to a classical market approach.

9.4 Conclusions

After prices have been 'published' they are not set in tablets of stone, but merely form the basis of negotiated contracts. Purchasers are able to influence the total contract value and consequently the prices for work performed. The providers operate differing pricing arrangements for different purchasers. Openness in costing appears patchy, information is more likely to be provided to the host purchaser, but at present, little demand for the NHSME standard information is apparent. Negotiations centre on the total

contract value rather than individual prices or cost structure. The contracts are loosely defined and are linked to long term relations.

The NHSME rules are a necessary attempt to try and achieve consistent, meaningful and comparable prices to enable purchasers to make efficient choices. However, in the emerging market, the prescribed pricing regime seems out of step with the way contracts are actually negotiated and relationships maintained. The pricing regime relates to a model where purchasers observe the prices charged by several providers for a particular product and select the lowest price provider (i.e. the retail model). The reality appears to be a much more co-operative, network arrangement which is akin to many industrial markets. Contracts are negotiated and long term relations developed. Market incentives do not exist to ensure that economic efficiency through the price mechanism is facilitated.

Chapter Ten **HYPOTHESIS EVALUATION**

10.1 Introduction

This chapter evaluates the research hypothesis using the findings from the 1991 and 1994 surveys and the two case studies. After briefly summarising the research area and hypothesis, the evaluation is undertaken by examining evidence relating to the research questions. The issues concerning accounting choices for cost-based prices in the NHS internal market are discussed. The chapter concludes with an overview of the hypothesis evaluation.

10.2 The hypothesis and research context

> "Following the Review of the NHS, the Government has decided that a provider market will be set up in the NHS. The purpose of this reform is to improve the efficiency of the NHS." par. 2 DoH (1989e).

Markets (whether taken from a neo-classical, neo-Austrian or contestable market perspective) operate via price signals. Due to difficulties in ensuring that the NHS internal market is competitive (or at least contestable), the DoH has specified pricing principles which require cost-based pricing which should imitate 'the ideal hospital market'.

Little was known of how regulated price mechanisms operate in the new social policy paradigm of quasi-markets. The research study addresses the hypothesis that cost based pricing could be used to facilitate an efficient allocation of resources in the NHS internal market.

The research hypothesis is -

> *Cost accounting methods can be developed to enable healthcare contracts to be priced on a cost-basis in a manner which will facilitate the achievement of economic efficiency in the NHS internal market.*

The research questions behind the hypothesis are:

- *Can cost-based prices which are reasonable measures of resource consumption be determined for healthcare services?*
- *Can prices be meaningfully compared between alternative providers?*

The research focus is the accounting choices within cost-based pricing: product definition; the cost approach and methods of cost attribution. Two research methods were used: surveys and case studies. By undertaking two surveys: one at the commencement of the internal market and a follow up survey three years later, it was possible to determine how cost -based pricing had progressed as the internal market matured. In order to gain a fuller understanding of the issues surrounding the costing and pricing processes in NHS hospitals two case studies were used. The findings of the surveys and case studies are evaluated below in relation to the research questions.

10.3 Prices as measures of healthcare resource consumption

In the model of the NHS internal market, prices act as a signal to purchasers to place contracts with purchasers who offer the best value, and through competition or openness in costing and pricing encourage providers to achieve technical efficiency. In order to provide appropriate signals to purchasers and providers, prices should accurately reflect provider cost (or more specifically, LRAC).

The 1991 Survey

A number of findings from the 1991 survey show that prices were not reliable indicators of healthcare resource consumption.

- Less than a third of hospitals attributed general service overheads to patient treatment departments, most attributed the overheads directly to specialties. Section 3.8 illustrates the potential discrepancies in cost attribution that can arise from such simplistic approaches.
- None of the hospitals surveyed had an operational case-mix management system, but it is difficult to see how costs can be confidently attributed below specialty level without such systems.
- Departmental cost systems were rare e.g. only 17% of hospitals had theatre costing systems, therefore even the cost attribution of some direct patient treatment services to specialties was undertaken with dubious precision.

- Over 30% of the hospitals surveyed based their GPFH procedure prices entirely on specialty in-patient day costs, but there are significant variations in resource consumption over and above variations in length of stay.

Cost methods and hence the prices produced for 1991/92 contracts and ECRs in the West Midlands were not accurate measures of resource consumption. A high proportion of total costs were attributed to contracts on inadequate information. Even direct patient care costs at specialty level were of dubious credibility and the understanding of cost behaviour was very limited.

The 1994 Survey

Three years into the market, cost-based pricing had become more sophisticated and reliable. The NHSME guidance issued in 1993 had detailed minimum standards of apportionment and a two staged approach to cost attribution. The 1994 survey found improvements in the reliability of cost-based prices:

- Only one provider reported using a percentage uplift to cover general overhead items. The majority of providers were adopting a two staged approach to attribute support services, but there were instances of providers placing all their support service costs direct to specialties rather than passing them through patient treatment services.
- Minimum standard apportionment bases were generally achieved.

However, there was still a shortage of activity information systems necessary for assigning costs to procedures below specialty level, or even realistic methods for attributing some direct patient treatment costs to specialties. Case-mix and other resource management systems were not available in most provider units/ trusts in 1994.

The costing processes in the case studies

In both case studies, the costing process was staged (Figures 27 and 28), but did not deal fully with any reciprocity between support departments. Both providers attributed costs in considerable detail using numerous apportionment bases, St Somewhere input hundreds of budget lines into the costing system. Apportionment bases at or above the minimum prescribed in

the NHSME Guidance were applied, often with a number of apportionment bases for a single budget cost centre.

However, the cost-shifting and price manipulation evident in the case studies and to which the 1994 survey alluded means that frequently, prices did not accurately reflect costs. Section 8.6 provides a number of examples of how prices were manipulated e.g. treatment of an ingrowing toenail was priced at two-thirds of costs at Thereabouts. At St Somewhere, the costs attributed according to the NHSME guidance (and hence prices) were shifted to enable total contract value for each DHA to remain at the same level as previously . St Somewhere also used a sliding scale of prices for GPFHs according to the proportion of their budget they committed to the Trust (section 9.2), such discounts inevitably break the link between cost and price.

10.4 Price comparisons as indicators of relative efficiency

If the internal market is to lead to a more efficient allocation of NHS resources, NHS purchasers must be able to make valid comparisons between providers, prices must be comparable and reflect relative efficiency.

The 1991 Survey

In 1991, this was clearly not possible. Large variations in specialty prices were apparent in hospitals throughout the Region, however, procedure prices were even more diverse. It is extremely unlikely that such variations were largely due to different treatment patterns, efficiency or quality. Efficiency comparisons were hampered by the lack of consistency in cost allocation and apportionment methods between different hospitals. These findings were confirmed by a CIPFA study (CIPFA 1992), the Audit Commission's report and accounts for 1991/92 and the later survey undertaken by the National Steering Group on Costing.

The 1994 Survey

The NHS Executive had been reluctant to prescribe detailed rules for cost attribution, indeed the 1993 rules were first put forward in 1992, but following an outcry from Trusts regarding infringement of their freedom to manage independently, they were issued in April 1993 as 'strong guidance'. The 1993

costing for contracting guidance required most providers (63%) to substantially revise their approach. However, a number of findings in the survey cast doubt on whether a high degree of consistency has been achieved.

- Half the providers did not regroup their budgets into nationally recognised categories in order to consistently apply the guidance, this inevitable increases the scope for inconsistency.
- There were still isolated occurrences of providers not using a staged approach (as specified in the Guidance) to overhead attribution.
- Application of the costing analysis and classification also appeared inconsistent. Although 75% of providers expressed no difficulty in applying the guidance regarding the additional cost classification (fixed; semi-fixed; variable), the considerable variation reported regarding the level of such costs, casts doubt on whether the guidance is consistently applied. Similarly the vast majority of providers reported no problems concerning the cost analysis by type, but the cost analysis by type shows large variations between individual providers.
- Although a number of providers were setting prices below specialty level for DHAs, there was little consistency in contract categories. Considerable development is necessary to achieve systematic costing and pricing using consistent contract categories below specialty level.

The case studies

The case studies have shown how marked differences in costing approaches for pricing contracts remain. The introduction of multiple steps in the cost attribution process, and a greater level of detail for apportionment bases increases the differences between providers. A number of factors influence the costing and pricing process which reduce the impact of the NHSME's endeavours to achieve uniform approaches to costing and pricing. Information needed for budgetary control and decision-making inevitably take precedence over "guidance" set down by a remote Executive. Lack of consistency in both the costing process and how those costs are compiled into product lines will make comparative efficiency very difficult to assess.

The 1993 NHSME Guidance sought to achieve consistent, meaningful, comparable prices. However, although accuracy and consistency improved, valid comparisons were extremely limited. 'Published' prices provide little scope for establishing the comparative efficiency of providers. A major problem is the lack of comparable 'product lines' (contract categories) for pricing purposes. For DHA purchasers this problem is increasing as providers locally define procedures or groups of procedures for pricing purposes, neither prices for DHAs nor ECR prices were reconcilable between the two providers in the case studies (section 8.5), this could be viewed as a form of product differentiation. Significant differences in cost assignment were still apparent. The cost analysis and classification imposed by the NHS Executive appeared to add little to the price comparisons or contract negotiation. Performance data relating to how patients are treated (ALOS etc.) and outcome data (re-admission rates etc.) are probably more meaningful additions to the process. Furthermore, cost-shifting and price manipulation frequently occurred.

In the NHS internal market, price signals neither accurately reflect cost nor enable valid comparisons between providers.

10.5 Accounting choices for cost-based prices

In the NHS internal market, the existence of monopolies and difficulties in ensuring contestabilty led the NHSME to require prices to be determined on a full cost basis with a return on capital. The principles were set out as follows:

> *"Provider units will need to price their services so that the income recovered matches the net costs incurred. There are three fundamental principles underlying the way in which service costs and prices are to be established:*
>
> *a prices should be based on costs;*
>
> *b costs should generally be arrived at on a full cost basis;*
>
> *c there should be no planned cross-subsidisation between contracts.*
>
> *.....The guidance permits a large degree of discretion to units in the detailed methods they adopt for cost allocation, and apportionment, but the methods should in all cases conform to these principles."*
> *NHSME (1990a) par. 2.*

According to the NHS internal market model, developing cost methods for prices which reflect comparative efficiency is important if an improved allocation of NHS resources is to result from the internal market. Such prices would encourage efficiency and drive the market towards a long run equilibrium characterised by productive and allocative efficiency. However, in order to reduce the likelihood that in monopoly situations, cost-plus pricing would encourage cost-enhancing inefficiency, openness in costing and pricing was seen as necessary.

In the first four years of the market, prices were not providing appropriate signals to facilitate the market's efficiency aims. Whether accounting choices can be made to enable prices to produce the necessary prices is considered below.

The elusive true cost

It is extremely difficult to achieve reliable costs because of the individual nature of healthcare provision. This appears to be a common problem of service industries which could explain why cost-based pricing is not prevalent for services. Fitzgerald et al (1991) noted -

> "When we looked at a range of service companies we were surprised to find that many of them did not seem to try to accurately cost individual services, either to ascertain their profitability or to set prices. This may be explained by the difficulty many of them had in tracing costs..." Fitzgerald et al (1991), p22.

They go on to observe that costing has been used extensively to plan and control via responsibility centres, (an observation that is equally applicable to the NHS, section 5.3), but conclude -

> "Costs are not extensively used to make price decisions in service industries except in professional services." Fitzgerald et al (1991), p30.

The 'true' cost of healthcare services is an elusive concept. The Brunel study of the resource management pilot sites found that validity of information was difficult to achieve, but the linking of costs and activity depends on having accurate activity information available (Packwood et al, 1991). In Chapter Three it was illustrated how the full cost could be derived in a number of different ways. Given the high level of indirect and overhead costs and the

vast range of services provided by acute hospitals, the full cost of individual healthcare services cannot be determined with precision, this problem is compounded as the cost object is more closely defined (e.g. from broad specialty to specific procedures within specialty). At specialty level, a large proportion of costs are direct: clinicians, nurses, ward clerks etc.. As the cost objective moves below specialty level to procedures, very few direct costs can be identified, 'direct treatment services' are subject to apportionment. Cooper (1990) describes the hierarchical 'resource consumption' model which explains that the lower one attempts to compile full costs, the greater the need for arbitrary allocations and apportionments.

In recent years there has been considerable debate and development on how to generate product costs. The debate stems from the activity-based costing (ABC) methodology originally developed in a manufacturing context. It is argued that an ABC approach will result in more accurate product costs (Cooper and Kaplan, 1988). An ABC approach has been considered to be appropriate to product costing in healthcare: HFMA/KPMG (1992); Chan (1993); CIMA (1993); King et al (1994).

On the introduction of the NHS internal market, many overheads and indirect costs were applied direct to contracts on an in-patient day basis. The NHSME Costing for Contracting Manual currently recommends this approach for catering, laundry and portering services; and after specialty costs have been compiled, in-patient days are largely used to determine procedure costs. High in-patient day rates make bed days, at least apparently, an extremely expensive resource and therefore operating practice has been continually modified to reduce bed days (which intensifies the effect of high day rates because the costs are artificial). An ABC approach would examine the nature of overheads and their causes. Cost drivers would then be applied to cost output.

Chan (1993) and CIMA (1993) considered the use of ABC to build up unique patient costs (similar to the patient costing in the RM initiative). HFMA/ KPMG (1992) and King et al (1994) considered ABC product costing potential in relation to costing contract categories. The Costing for Contracting Manual

specifies one base for apportionment of each department's cost, twelve bases are specified for apportioning overhead or support service departments (i.e. non-patient treatment departments). In examining specific areas of hospital cost, more than one cost driver is usually appropriate. For example, theatre costs are attributed according to operating time in the Costing for Contracting Manual, but there are at least two factors: the number of operations in addition to the length of operation which drive theatre costs. In the case studies, the costs were attributed in greater detail than specified in the Manual, individual budget lines were often input rather than the total budgeted cost of the department and a number of different apportionment bases used. In this respect it could be argued that elements of the ABC approach are already apparent in NHS costing practice. Admittedly, in the case studies, the budgets were not assigned to homogeneous cost pools, but the development of costing below specialty i.e. HRG, chapter three of the Manual, does recommend the use of a number of homogeneous cost pools designated as condition-specific or time-based and as variable, semi-fixed and fixed.

Theoretically, the greater use of the ABC approach could lead to costs and hence prices which closely reflected resource consumption. However, there are two practical impediments to the development of more sophisticated approaches to healthcare product costing:

a) The costs associated with sophisticated systems. Set up and operating costs of an ABC system may be high due to the complex technical nature of much of the work, King et al (1994), HFMA/ KPMG (1992). The 1994 survey highlighted the investment in resource activity systems necessary for more sophisticated systems. King et al also indicate high costs in consultant fees, staff time and behavioural impact. A recent HFMA report estimated that the NHS Executive's further costing initiative may cost over £10m without taking account of the extra activity information required in operational departments (Brown 1995).

b) The limited use made of more sophisticated cost information (see section 8.6 - cost manipulation and section 9.2 contract negotiation). The accountants in the case studies saw the cost-based prices as a start point for contract

negotiation. In the 'cost-shifting' undertaken for pricing purposes, the accountants in both case studies foresaw no difficulty in the audit scrutiny of the costing process, they felt that nobody could claim to be more knowledgeable than the manager on the spot about how the costs related to specialties and/ or procedures.

There was little evidence of demand for more sophisticated costing or pricing. These findings are reinforced by King et al (1994)-

> "There was a feeling evident, particularly among business managers, that more sophisticated treatment costs were not necessary. In part this was considered due to the need to use only broadly based costs in contract planning as the whole exercise was subject to great uncertainty. Moreover, there was some evidence that the main customers, HAs, were not demanding and could not cope with more extensive and detailed costings." p(ix).

The use of more accurate costing methods such as ABC would be justified only where the expected benefits outweigh the expected costs; simple approaches may be 'optimal' when information costs are introduced into the frame. The benefits of more accurate information for product pricing in the NHS internal market may not be significant, but the benefits of ABC are now largely seen in terms of cost management as it is activities rather than costs which can be managed (Brimson 1991; Cooper and Kaplan 1992; Johnson 1988).

The comparative true cost

Obtaining costs which are reasonably accurate and comparable is even more problematic. In order for purchasers to make rational decisions between providers, they must be able to make valid price comparisons. However, the 1994 survey shows significant differences in cost attribution methods and apportionment bases. The case studies highlight this latter point and also explain some of the reasons for non conformity. The two case study providers continue to have markedly different approaches to the cost attribution processes. This is inevitable as the NHSME is specifying a minimum approach above which providers are encouraged to develop; and setting the guidance using summary headings when most providers are compiling cost flows on a much more detailed basis.

Presumably, the NHSME's encouragement of costing for pricing above its prescribed minimum level is to enable the costs compiled to move closer to the elusive "true" cost. Sutcliffe (1991) has illustrated the possibility of aggregation effects if departments are merged for service cost allocation. As costing approaches become more complex (and accurate) they will also be harder to standardise. King et al (1994) found that an ABC study of the radiology service would have to be modified for use in other hospitals. Studies concerning cost allocation techniques suggest that accounting methods used in practice are 'driven' by political, behavioural and organisational control factors rather than economic ones (Atkinson, 1987). In the case studies it was found that the need to achieve "ownership" of data and be in congruence with budget systems was more important than guidance by the NHSME. As Bromwich and Bhimani (1989) observe-

> "No isolated search for more effective cost allocation methods within a constrained theoretical economic framework is likely to yield universal guides to managerial issues of cost management" p70.

Similarly, the cost analysis and classification laid down by the NHSME is not applied consistently, consequently adding little to comparisons between providers.

The major problem in comparing prices and costs between alternative providers is the lack of a commonly defined product or standard contract category. HRGs are currently being investigated for possible future use, but as costing becomes more detailed and complex it also becomes more costly and difficult to ensure a uniform approach. If providers become more sophisticated in an unco-ordinated manner, this in itself may lead to distortions in resource allocation (see Appendix U, a hypothetical example of more refined costing and pricing and the consequences). There is a conflict between accuracy and comparability, but both must be achieved in order to provide appropriate price signals. The benefits from more accurate cost systems are largely in terms of cost management, but this requires cost systems to be tailored to individual circumstances (political, behavioural and organisational considerations). On the other hand, the individual tailoring of

cost systems impedes consistency and hence comparability. Furthermore, providers need to develop in unison if misallocations are to be avoided.

The conditional true cost

It has long been accepted in accounting literature that cost depends on the purpose for which it is to be used. J.M. Clarke (1923) concluded that there could be no unique concept of cost. Piper and Wally, (1990) and (1991) have argued that a more complicated product costing system is not necessarily a more accurate or useful one. The accuracy of ABC, they argue, assumes that increasing the number of cost drivers improves accuracy, but not all overheads behave linearly in respect of a cost driver. A conditional truth approach requires relevance not accuracy.

The NHS costing for pricing principles stipulate a full absorption cost, including current cost depreciation and a return on capital, for pricing purposes; marginal cost is permitted only for in-year unplanned spare capacity. The high level of fixed and semi-fixed costs in hospitals makes this a financially unattractive approach for many pricing decisions at individual provider level. Full costs include apportionments of fixed costs which may be unaffected by particular contracts. In the case study sites, it made financial sense at local level to provide a sliding scale of prices to GP fundholders according to the level of work they committed to the Trust, similarly, cross-subsidisation of GPFH procedure prices at Thereabouts was also financially sound (there are a large volume of costs which are common (joint) for procedures within the specialty). Full cost pricing may lead to work being lost which could provide a substantial contribution. The providers need cost systems which help them manage costs, but while to remain viable they must recover their costs, full cost pricing of each area of work or for each purchaser may not be the provider's best financial strategy (the debate concerning absorption or marginal cost for pricing purposes is covered in section 3.4). The NHSME's rules are not in line with the financial incentives at local level.

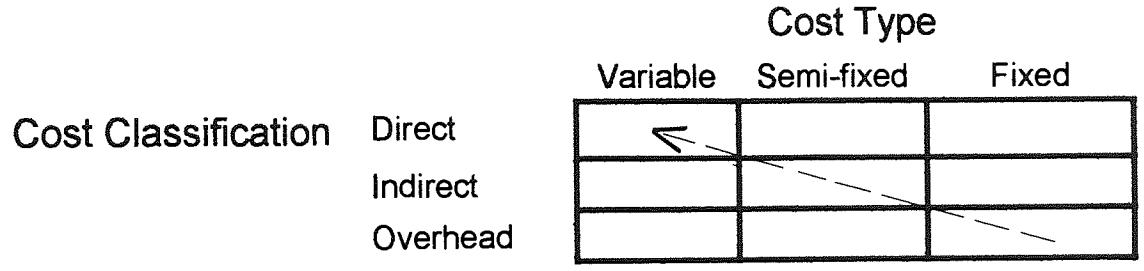
The NHSME's 'guidance' for a uniform analysis and classification of costs holds similar problems. Chapter One of the Costing for Contracting Manual stipulates

> "the contracting process would be more flexible and responsive to changes in activity if the proportion of costs identified as fixed were to be reduced and the proportion of costs identified as variable were to be increased" par. 1.1.2.

This proposed movement is illustrated in Figure 30. The NHSME argue that changes in the structure of costs are necessary if providers are to become more flexible and responsive to changes in the pattern of demand.

Figure 30:

Proposed movement in cost structure



However, treating more costs as direct requires more detailed recording systems and this does not necessarily lead to benefits unless it will effect decisions. According to the pricing rules, it could reduce cross-subsidisation due to misallocation, but it would generate higher overall prices. On the other hand, the case studies indicate that it is market forces which lead to cost-shifting, and therefore increased precision would be futile (though arguably it may be harder to disguise such cost-shifting).

An imposed analysis of costs as variable, semi-fixed and fixed has little meaning to individual providers. Classifying an element of cost as variable does not alter the behaviour of that cost element - the behaviour will be determined by the particular circumstances at each provider not by the tag assigned by the NHSME. Nursing costs are classified as semi-fixed in the guidance, but the hospital may be able to shift nursing resource flexibly between a number of specialties, it is this ability which is important rather than the length of the employment contract. In the multi-product NHS, flexibility in

the use of resources is the real issue, this will depend on local operational arrangements.

Local circumstances are likely to dictate the providers pricing strategy and a form of useful cost analysis and classification. A number of writers have postulated how easy it would be to manipulate full-cost prices. MacKerrell (1993) observes that prices are normally determined by the market place and are often not made on a full cost basis at least in the short term -

> "But how can a manager affect the result of a calculation when the method has been predetermined? Simply the manager must select an appropriate basis for allocating indirect costs to individual procedures in order to arrive at a full cost." p151.

Providers would be able to influence price through their methods of cost allocation and apportionment and activity estimation, freedom still remains despite the 1993 guidance (which makes no attempt to address activity estimation). Mellet et al (1993) point out that providers could employ penetration pricing through underestimating costs and/ or overestimating activity or, conversely, price skimming by overestimating costs and/ or underestimating volume thereby exploiting their monopoly position for certain services. The case studies provide evidence of such action despite the 1993 guidance.

Therefore, if the pricing rules are to produce accurate, full-cost prices constructed in a consistent manner, they must be obligatory not merely guidance, very clearly and thoroughly set out and be capable of enforcement.

10.7 Conclusions

The hypothesis - *Cost accounting methods can be developed to enable healthcare contracts to be priced on a cost-basis in a manner which will facilitate the achievement of economic efficiency in the NHS internal market* - is not supported.

Cost-based pricing has failed to provide appropriate price signals to purchasers in the first four years of the NHS internal market: prices neither accurately reflected resources consumed nor enabled valid price comparisons between providers.

Examination of the accounting choices shows the search for accurate health service product costs to be technically difficult and expensive. The nature of healthcare services makes homogeneous products very difficult to determine let alone their full cost in precise terms. There will be high transaction costs (additional activity systems, staff resources etc.) associated with compiling such costs and prices and operating detailed contracts. When the further requirement of comparability is added, achievement of appropriate costs becomes still more problematic. There is conflict between accuracy and comparability. Accurate costing (and classification and analysis) should reflect local operational management and therefore rigid rules cannot apply. A further stumbling block is costing relevance. Although costly 'truth' could be achieved and to some extent even costly, 'comparable truth', the financial incentives at individual provider level are not consistent with full-cost pricing including a 6% return for all 'products' and all purchasers. It has been shown that there will be incentives at individual provider level to cost-shift to manipulate prices. The nature of acute health service costs (i.e. the high level of joint costs and few direct costs), particularly at procedure level, make it relatively easy to manipulate cost-based prices. Therefore compliance with costing and pricing rules will be difficult to ensure.

Chapter Eleven **CONCLUSION**

11.1 Introduction

This final chapter provides a review of the research study and its findings. The implications of the research and further fruitful areas of study are highlighted. Finally, the main research conclusions are set out.

11. 2 Review

Chapter 1. Since the Second World War, the predominant policy paradigm in social policy had been the top-down planning model with decision-making responsibility formally invested in elected officials, while day-to day operating authority was delegated to administrators and planners. Following scrutiny based upon neo-classical economic criteria and market oriented values, quasi-markets have recently been introduced into many areas of social policy in the UK. The 'social administration paradigm' of the 1940s had been overturned and a new paradigm emerged (Glennerster, 1994)-

> "The provision of services was to be undertaken by agencies different from the ones buying the service. The relationship was to be contractual not managerial...Competition became the essential guardian of the public interest and the means of achieving efficiency" p132.

The introduction of competition is supposed to encourage a more economical use of resources, thus improving technical efficiency. Furthermore, the introduction of competing suppliers could improve allocative efficiency. Welfare users or at least their agents, should have alternative sources of supply. In 1990, there was very little research concerning how markets for publicly funded services should operate to stimulate the desired efficiency gains. The research study considered the NHS internal market.

Chapter 2. Markets provide a mechanism for allocating resources. Perfectly competitive markets, according to neo-classical economics, provide the most efficient means of resource distribution. Healthcare systems are subject to substantial state intervention. The reasons often given for such extensive intervention relate to market failure in relation to the neo-classical model and equity considerations. However, that is not to say that healthcare systems

cannot benefit from the 'competitive process' nor achieve some of the efficiency gains of contestable markets. An alternative view of governance structures is provided through transaction costs analysis - uncertainty, bounded rationality, and opportunism must be considered together with 'small numbers', 'asset specificity' and the frequency of transactions. High transaction costs may be associated with the internal market, but efficiency gains from competition must outweigh transaction costs if more or improved healthcare is to be gained through the NHS internal market.

Chapter 3. On the introduction of the NHS internal market, scope for efficiency savings existed and the argument for an NHS driven by efficiency was a powerful one. Prices are fundamental to the efficient operation of markets. Due to difficulties in ensuring that the NHS internal market is competitive (or at least contestable), the DoH has specified pricing principles which require cost-based pricing. The prices are rationalisable under neo-classical economic theory and seek to imitate the 'ideal hospital market'. However, their application to the new social policy paradigm of internal markets was untested.

The research study examined the role and development of cost-based pricing in the NHS internal market. The research hypothesis was postulated -

Cost accounting methods can be developed to enable healthcare contracts to be priced on a cost-basis in a manner which will facilitate the achievement of economic efficiency in the NHS internal market.

The research questions behind the hypothesis were :

- Can cost-based prices which are reasonable measures of resource consumption be determined for healthcare services?
- Can prices be meaningfully compared between alternative providers?

Fundamental to both questions is that price is a function of quantity. In addition, in order for prices to operate as effective signals:

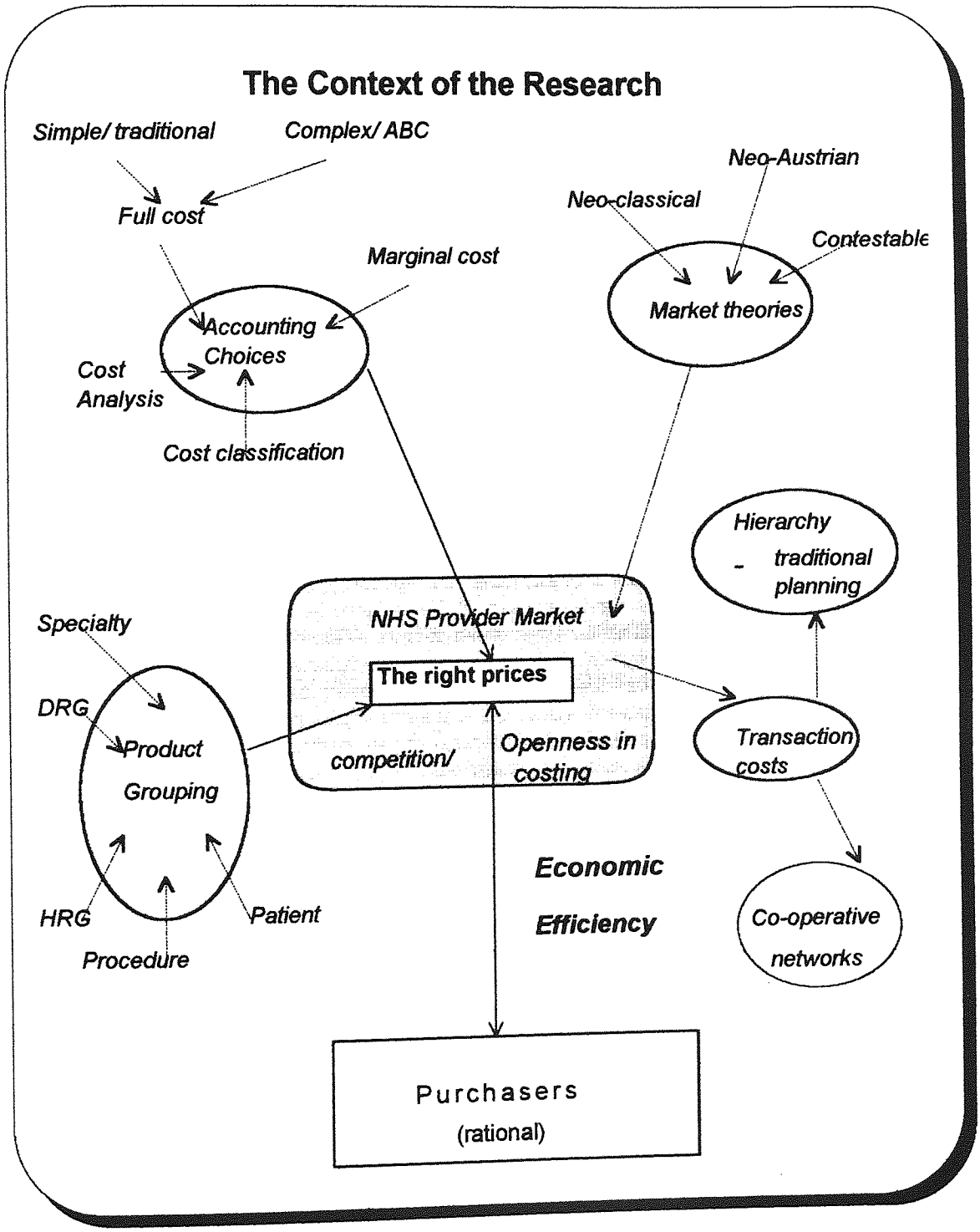
- providers must be encouraged to achieve productive efficiency through competition and/ or openness in costing and pricing (i.e. yardstick competition); and
- purchasers must respond appropriately to price signals.

These aspects require the market to be appropriately structured and managed.

The research focus was the accounting choices within cost-based pricing: product definition; the cost approach and methods of cost attribution.

The research context is summarised in Figure 31.

Figure 31:



Chapter 4. Following a preliminary review of NHS cost information to establish the problems and potential for cost accounting methods in pricing healthcare, two research methods were chosen: surveys and case studies. Surveys enabled the cost-based pricing methods used by many NHS acute healthcare providers to be identified and described economically. By undertaking two surveys: one at the commencement of the internal market and a follow up survey three years later, it was possible to determine how cost-based pricing had progressed as the internal market matured. In order to gain a fuller understanding of the issues surrounding the costing and pricing processes in NHS hospitals two case studies were used. The case studies were selected from different geographic environments and had marked differences in terms of size and complexity of service provision. The surveys enhanced the generalisability of the research whilst the case studies provided internal validity and depth of analysis.

Chapter 5. Cost information in the NHS had developed rapidly in the years prior to the internal market, but there was very little information available at the level required for costing and pricing healthcare contracts. The Resource Management pilot sites and the cost methods adopted at some US hospitals indicated potential approaches to achieving meaningful, cost-based prices, but such approaches are expensive and difficult to implement. Ensuring quality and efficiency through contract specification will be particularly onerous.

Chapter 6. The 1991 survey found that prices provided inadequate signals to purchasers and providers to encourage economic efficiency. Contract prices were not generally related to quantity, block contracts prevailed. Inadequate product definition for DHA contracts made valid comparisons between providers impossible. Where products were more clearly defined (i.e. GPFH procedures) prices did not reflect the comparative 'true' cost of resources consumed. A high proportion of costs were attributed to contracts on inadequate information and there was a lack of consistency in cost allocation and apportionment between providers. In 1991, cost-based prices were not fulfilling their fundamental role in the NHS internal market. Improved contract

categories, consistency of approach and bases of cost attribution were required to facilitate economic efficiency.

Chapter 7. Three years later, the 1994 survey found that price signals were still not adequate to enable the NHS internal market to achieve its efficiency aims. Some progress towards contracts more closely related to activity had been made, but the vast bulk of provider income still came from block contracts. Inadequate product definition and the lack of even uniform specialty pricing, made efficiency comparisons between providers for much of their workload impossible. Where products were more clearly and consistently defined (i.e. GPFH procedures) some of the price variation was due to the crude pricing methods used. The cost methods behind the prices had improved and the 1993 NHSME guidance (which formed the Costing for Contracting Manual) had led to increased consistency, but there were examples of non-compliance and there was much local subjectivity surrounding application of the guidance. There was still a lack of activity systems to enable even some direct patient care costs to be accurately attributed to specialties and, most importantly, to enable more meaningful, consistent contract categories to be used below specialty level.

Chapter 8. The case studies showed how marked differences in costing approaches for pricing contracts remain despite detailed guidance issued by the NHSME. A number of factors influence the costing and pricing process which reduce the impact of the NHSME's endeavours to achieve uniform approaches to costing and pricing. Local circumstances, particularly past experience and the information needs for budgetary control and decision-making, tend to dilute the application of the guidance. Comparisons between the two cases were difficult. Services were often too broadly defined or not defined consistently, and therefore price comparisons were not meaningful or even possible. The cost analysis and classification stipulated in the NHSME guidance, as implemented, is unhelpful. Basic data regarding length of stay and outcomes seem much more reliable and relevant than inconsistent cost data. Price variances may be due to differing cost approaches and, indeed, the instances of cost-shifting found in the cases

question the basic premise that individual prices actually reflect cost. Cost-based prices are adjusted according to 'market conditions' - competitor prices and the ability of purchasers to pay.

Chapter 9. The case studies also provided a valuable insight into the contract negotiation process. After prices have been published they are not 'set in tablets of stone', but merely form the basis of negotiated contracts. Purchasers were able to influence the total contract value and consequently the prices for work performed. The providers operate differing pricing arrangements, especially as regards changes from previous contracts (levels of activity), for different purchasers. Openness in costing appears patchy, information is more likely to be provided to the host DHA, but at present, little demand for the NHSME standard classification and analysis of costs is apparent. Negotiations centre on total contract value rather than individual prices or cost structure. The contracts are loosely defined and are linked to long term relations. The NHSME detailed guidance sought to achieve consistent, meaningful and comparable prices to enable purchasers to place contracts with efficient providers. However, in the emerging NHS internal market, the cost-based pricing rules seem out of step with the way contracts are actually negotiated and relationships maintained. The cost-based pricing regime relates to a model where purchasers observe the prices charged by several providers for a particular product and select the lowest price provider. The reality appears to be a much more co-operative network arrangement similar to that found in many industrial markets. Contracts are negotiated and long term relations developed. Market incentives do not exist to ensure that economic efficiency is facilitated.

Chapter 10. The hypothesis - *Cost accounting methods can be developed to enable healthcare contracts to be priced on a cost-basis in a manner which will facilitate the achievement of economic efficiency in the NHS internal market* - is not supported.

The surveys and the case studies show that the prices used in the first four years of the market were inadequate to facilitate the markets efficiency aims. Pricing failed on both research questions:

- *Can cost-based prices which are reasonable measures of resource consumption be determined for healthcare services?*
- *Can prices be meaningfully compared between alternative providers?*

Reality had shown cost-based pricing to be inadequate, whether cost-based pricing could attain its perceived role in the NHS was discussed through assessment of accounting choices in achieving 'true', comparable and unconditional costs for pricing.

Establishing accurate health service product costs is technically difficult and expensive. The nature of healthcare services makes homogeneous products very difficult to determine let alone their full cost in precise terms. There will be high transaction costs associated with compiling costs and prices and operating detailed contracts. When the requisite comparability is added this becomes still more problematic. There is conflict between accuracy and comparability. Accurate costing (and classification and analysis) should reflect operational management and therefore rigid rules cannot apply. A further stumbling block is costing relevance. Although costly 'truth' could be achieved and to some extent, even costly comparable truth, the financial incentives at individual provider level are not consistent with rigid full-cost pricing including a 6% real return for all products and all purchasers. Marginal or relevant costs are often more appropriate than full-costs for pricing decisions. There will be incentives at individual provider level to cost-shift to manipulate the full-cost prices. The high level of joint costs and few direct costs (particularly at procedure level) make manipulation of cost-based prices relatively easy. Consequently, compliance with costing and pricing rules will be difficult to ensure.

11.3 Implications of the research findings and further research areas

Implications

The basic conditions set out for appropriate price signals and the operation of the market are not observed and serious problems surround their future achievement. The NHS pricing principles and guidance were established to simulate the pricing in a perfectly competitive market and avoid the abuse of

monopoly power. However, the pricing principles and detailed guidance are often at odds with the financial management incentives at local level. Figure 32 shows the differing perceptions between the NHSME and the local managers in relation to costing for contract pricing.

Figure 32

Different perceptions of costing for pricing

COSTING FOR CONTRACTING RULES: NHSME	INDIVIDUAL TRUST OR UNIT
One "true" or acceptable cost	Full cost is imprecise. Sophisticated cost systems are expensive and little need for pricing purposes.
Comparable cost: uniform allocation and apportionment; uniform cost analysis and classification.	Local circumstances: budget structures ownership by managers/ clinicians
Attribute all costs including a 6% return on capital. No cross-subsidisation	Use relevant costs Consider decision or purpose
Standard Contract Categories	Local need. Product and Purchaser differentiation
Openness in costing	Confidential/ commercially sensitive

The case studies and to some extent the 1994 survey, have also shown that the emerging NHS market(s) does not resemble the model espoused on the introduction of the NHS internal market i.e. purchasers observing the prices charged by several providers for a particular product and selecting the lowest price provider as the one with whom the purchaser will agree a contract. The NHSME rules are an attempt to try and achieve consistent, meaningful and comparable prices to enable purchasers to make efficient choices. However, in the emerging market, co-operative network arrangements appear to be the reality, where contracts are negotiated and long-term relations developed. Appropriate market incentives do not exist to ensure that economic efficiency is facilitated through the price mechanism.The Executive must therefore seek

to refine, monitor and strongly enforce the rules or reduce the need for cost-based pricing rules.

Refine, monitor and enforce the rules:

- Reasonably homogeneous, standard product groupings are imperative, otherwise it is impossible to have meaningful price or cost comparisons.
- The costing for contracting rules would need to be obligatory with very little scope for local discretion.
- Openness in costing could be made more meaningful by requiring information on major areas of resource input. It may be more beneficial to concentrate on providing outcome or output data rather than further disaggregation of costs.
- A strong audit or other compliance monitoring system will be necessary to ensure adherence to the rules.

Reduce the need for pricing rules

- Measures to ensure contestability would reduce the need for reliance on cost-based pricing. This will be difficult to achieve because of restrictions on public finance and duplication of services will lead to inefficiency. However, recent attempts to introduce private finance could improve contestability.
- Accept the reality of the co-operative working relationships between purchasers and providers and that there will often not be a realistic alternative provider (or purchaser). Use yardstick performance to find scope for efficiency savings and employ selective contracting for some services (at a level where cost-shifting would be difficult) to ensure existing service provision is or remains efficient.

Future research

The above points provide fertile areas for future research. More specifically, the following aspects are worthy of study:

- The feasibility and effect of using HRGs to form standard contract categories. Having a meaningful base for price comparisons has been a major stumbling block to the use of cost-based pricing to improve NHS efficiency.
- The trade off between a more detailed level of product grouping and transaction costs must be examined if the overall level of efficiency in the NHS is to be improved.
- The development of GPFHs could have a large impact on the nature of the market. Monopsony power would be reduced, more detailed contracting with higher transaction costs would probably arise, possibly with more effective purchasing. A number of GPFH projects have been established where GPFHs hold full budgets for their patients (i.e. all services).

11.4 Conclusion

The new social policy paradigm of internal markets separates purchasers and providers of services and attempts to simulate the rigours of a competitive market to produce improved efficiency. The NHS internal market has been used to examine the feasibility of a cost-based pricing regime to facilitate economic efficiency. In theory, the cost-based pricing rules would imitate the perfectly, competitive pricing of neo-classical economics: through the price mechanism and/or openness in costing, providers would be encouraged to be technically efficient and purchasers would use prices to improve allocative efficiency. The research hypothesis - *Cost accounting methods can be developed to enable healthcare contracts to be priced on a cost-basis in a manner which will facilitate the achievement of economic efficiency in the NHS internal market* - is not supported.

Acute healthcare services are not conducive to product definition, costing and pricing. The pricing rules relate to the neo-classical single product firm, but provision of healthcare is a diverse, service industry with many overhead and indirect costs. To establish meaningful products for contracting requires, a reasonable degree of homogeneity, but costing at this level results in few direct costs and the vast majority of cost being apportioned. Accurate costing

is therefore complex and subjective. Achieving consistency and comparability for such costs is technically difficult and expensive. Furthermore, greater accuracy may have to be sacrificed to achieve uniformity.

Internal markets in social policy are unlikely to have the features of a competitive market. The emerging NHS internal market is a set of oligopolies and oligopsonies in which inter-organisational bargaining is the central mechanism by which resources are allocated. Rigid full-cost pricing rules are incompatible with the perceptions and incentives operating at individual provider level. The cost-based pricing rules can easily be manipulated at local level and, given the financial management and market incentives, this may frequently arise. As a result, extensive monitoring and enforcement may be necessary, but this itself will be a costly process. Consequently ways to reduce reliance on the pricing rules may be a more attractive alternative.

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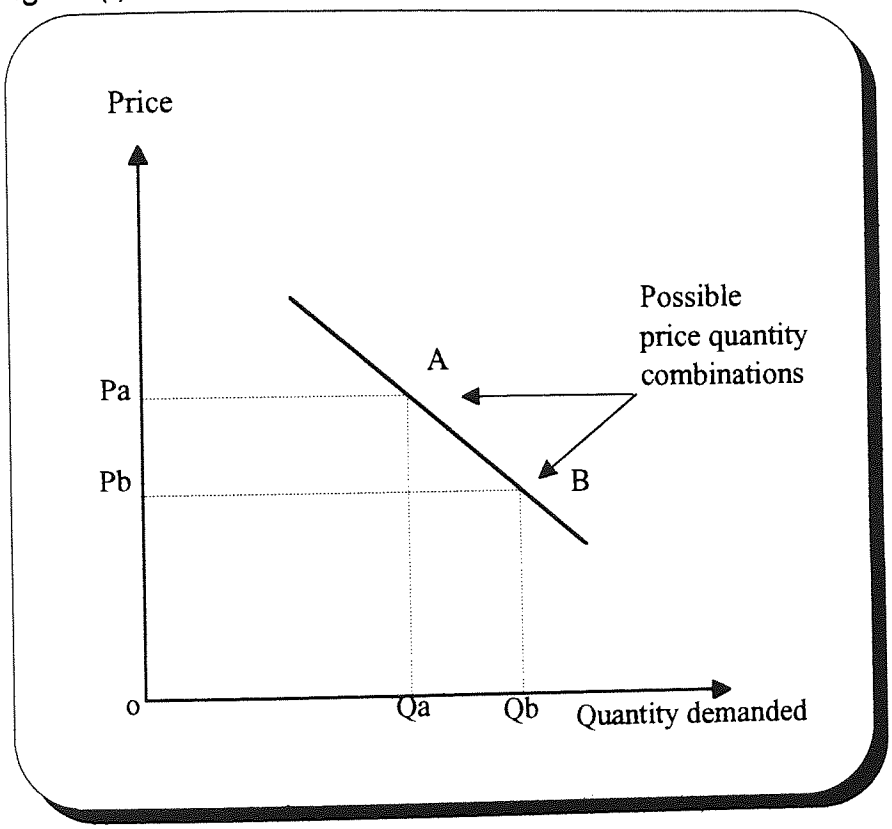
APPENDICES

Appendix A

The Economist's Pricing Model

The central feature of the neo-classical economic model is the assumption that the firm will attempt to set the selling price at a level where profits are maximised. For monpolistic/ imperfect competition the model assumes the lower the price, the larger will be the volume of sales. Figure (i)

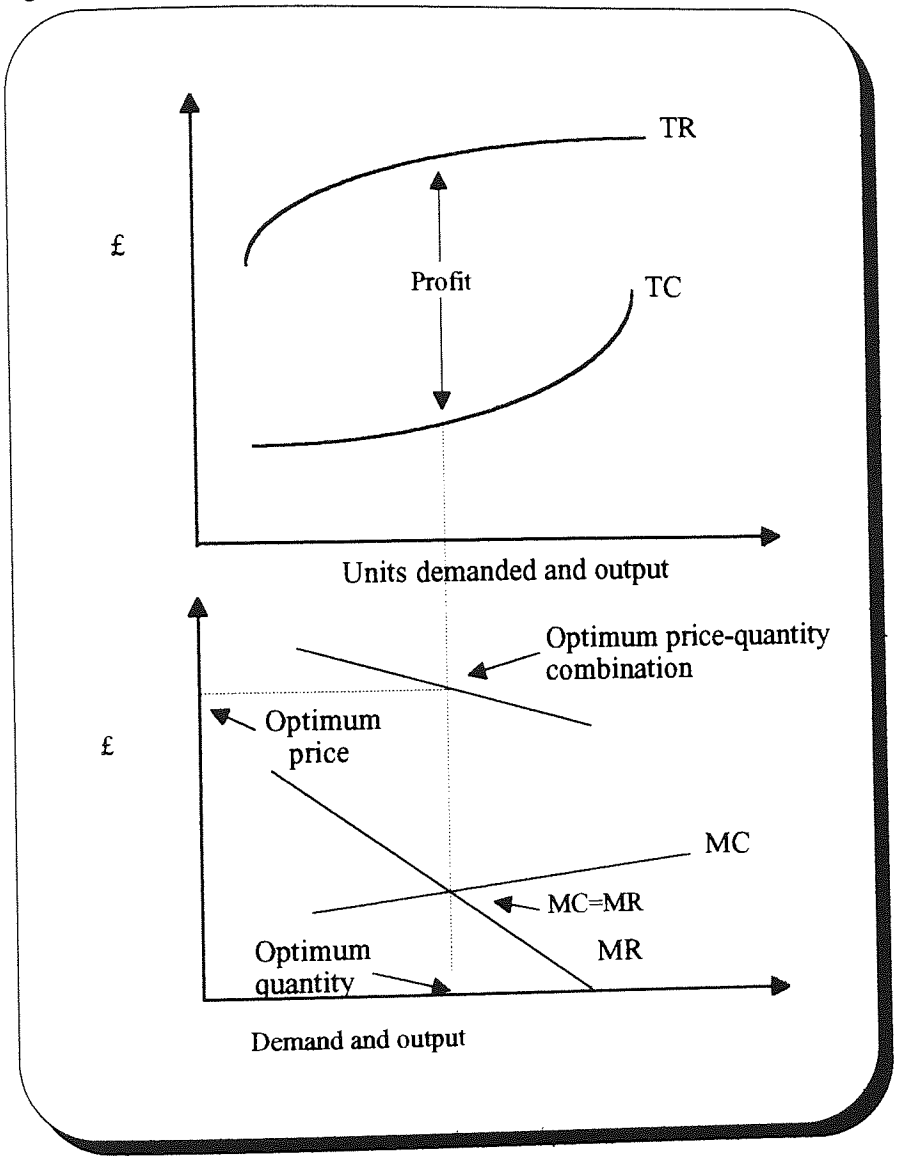
Figure (i) A demand curve



Points A and B represent two of many possible price/ quantity combinations: at price Pa, the quantity demanded will be Qa, while at the lower price of Pb the quantity demanded will increase to Qb.

The economist's model for establishing optimum price is shown in Figure (ii).
When total cost is climbing more rapidly than total revenue (i.e. unit marginal cost exceeds unit marginal revenue), a decision to increase the number of units sold will reduce the total profit.
The lower part of Figure (ii) shows the cost and revenue information in terms of marginal revenue and marginal cost. Marginal revenue represents the increase in total revenue from the sale of one additional unit, and marginal cost represents the increase in total cost when output is increased by one additional unit. The marginal revenue line slopes downwards to the right as demand increases reflecting the fact that the slope of the total revenue line decreases as demand increases. Similarly, the marginal cost line slopes upwards because of the assumption that total cost increases as output increases. **The optimum price is determined by the intersection of the marginal revenue and marginal cost curves.**

Figure (ii) Economist's model for establishing optimum price



Where there is perfect competition the selling price is given, and economic analysis is used to determine what level of output will be most profitable to the firm. Under oligopoly (a few large sellers), the point at which MR=MC determines the optimum selling price as set out above.

However, the neo Austrian approach emphasises the interaction in the market: the action taken by one firm will cause a reaction by others, and the optimal price and output decisions depend on how others react - the appropriate pricing policy becomes a problem of strategy.

Country	Ownersh	tor planning
Canada	Predom of truste	o planning by the The capacity of the y the provincial
United	Centra Nation	lth Authorities Because the owns all but the Health Authorities fully determine
Fran	Abou beds (mai gove priva	ibject to regional e central health plan, of the hospital
Neth	Loca boar	s & acquisition of nt requires a nse, which is egional & planning.

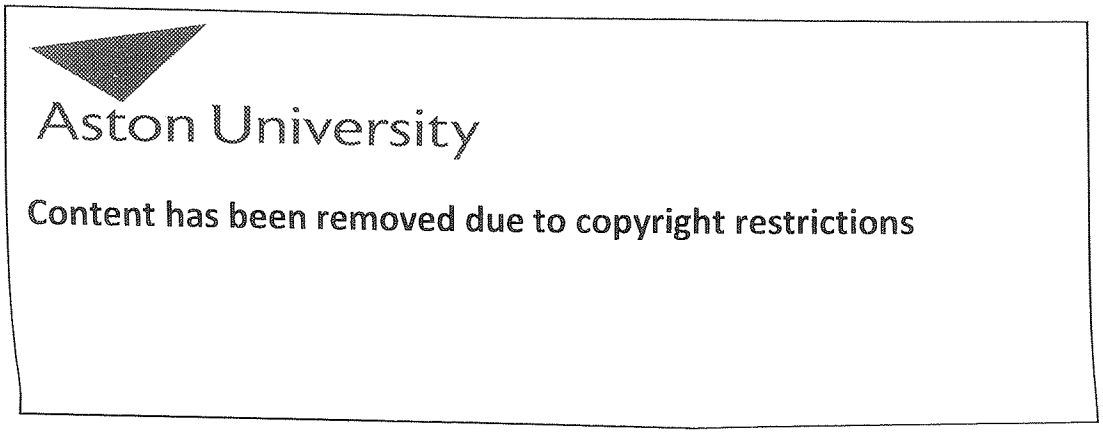
Financing of Health Care in Selected OECD Countries

Country	Ownership of	nning
United S		& local
Over 60%		ort. In
are privat		ls must
are non-p		· opening
are Feder		ns of
governmer		
	cost or charged based.	

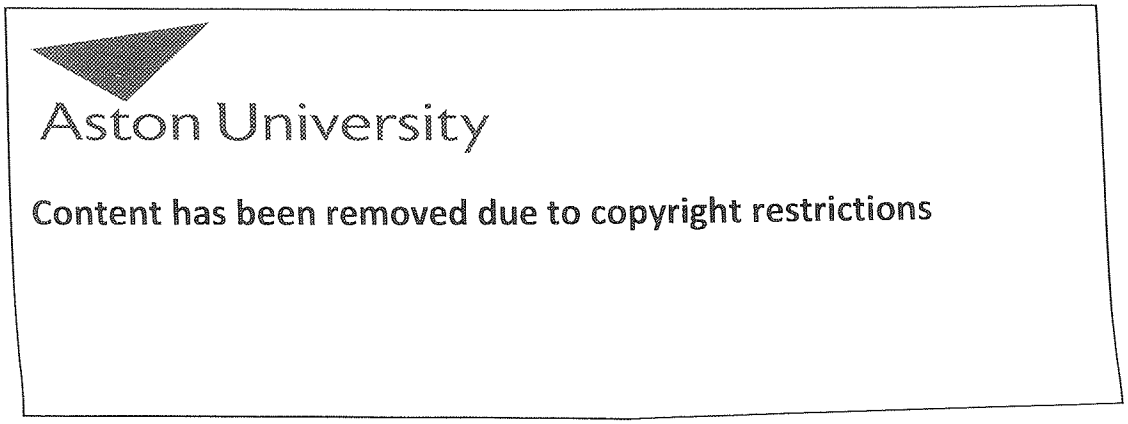
(Source: OECD, Financing & Delivering Health Care (1987)

Appendix C

Comparison of Old and New NHS



Role of GPs



prevention and treatment.

Source: Department of Health, PN 91/138

Appendix D: Section 2 Generic Quality Standards - *Queen Elizabeth Hopsital, Birmingham - Quality Standards for 1991/92 Contracts*

Standard	Provider Monitoring		Reporting Mechanism	Information Distributed to:	
2.2 Adherence to Statutory Requirement					
The hospital will seek to comply with all relevant legislation, statutory instruments, health circulars & notices (inc. regulations) which are appropriate to the service delivered in the hospital/unit within the resources available. Examples of these are:	Current compliance	Further action required		Managing purchasers	Other purchasers
Hospital Records Act 1990		Yes	Annual report on requests received by district of residence	Yes	On request
Fire precautions & firecode (including training obligations)		Yes	Costed programme to be prepared annually	Yes	
COSHH		Yes	Costed programme & annual report	Yes	
Health & Safety at work (inc. HSE enforcement orders)		Yes	Annual report	Yes	
Statutory regulations relating to health premises		Yes	Costed programme & annual report	Yes	
Notification procedure for notifiable diseases	Yes		Chairman local control of infection committee will produce annual report	Yes	Yes
Radiological protection	Yes		Exception report	Yes	Yes
Infection control	Yes		Costed programme & annual report	Yes	Yes
Ethics & research legislation	Yes		Review ethics committee policy on an annual basis	Yes	
Complaints procedure	Yes		Review complaints procedure annually & annual report by district of residence, plus a quarterly return	Yes	On request
Employment law	Yes		Exception report	Yes	On request
Environmental health	Yes		Costed programme & annual report to managing purchaser	Yes	
Data Protection Act 1984	Yes		Annual stocktake & report by district of residence	Yes	
Children Act 1989		Yes	Personnel policy to be produced	Yes	
Discharge procedures		Yes	Policy to be reviewed & updated annually	Yes	
Discharge procedures		Yes	Policy to be reviewed & updated annually	Yes	

Appendix D: Section 2 Generic Quality Standards Continued ...

Standard	Provider Monitoring		Reporting Mechanism	Information Distributed to:	
	Current Compliance	Further action required		Managing purchasers	Other purchasers
2.3 Clinical & medical audit					
A) Within each division/speciality/directorate there will be regular medical audit meetings. Medical audit being the 'systematic, critical analysis of the quality of medical care inc. procedures used for diagnoses & treatment, the use of resources & the resulting quality of life for the patient' (working paper 6 - medical audit 'working for patients' 1989)	Yes		Annual report prepared by the hospital audit committee, plus shedules of audit meetings will be produced quarterly	Yes	Annual report on request
B) The provider will also have protocols for the development of audit for nursing services & professions allied to medicine, these will involve the development of explicit standards, where such protocols do not exist the provider shall provide a timed programme for their introduction. This timed programme will be agreed between the provider & the managing purchaser	Yes		Annual report detailing current procedures of proposed developments to be prepared annually, plus schedules of audit meetings will be produced quarterly	Yes	On request
C) Where appropriate the procedures described in (a) & (b) could be replaced by comprehensive multi-disciplinary audit of services		Yes	Annual report on development of progress towards collaborative care planning & multi-disciplinary audit	Yes	
2.4 Human Resouces					
A) The provider will develop an appropriate human resource strategy to ensure an appropriately skilled & trained workforce is available in sufficient numbers tro meet the workload requirement of the service agreement. This will include recruitment & retention strategies & training & development plans		Yes	Unit personnel manager will prepare appropriate policy & produce an annual report	Yes	
2.5 Other General Standards					
A) The hospital will provide all patients with a suitable handbook or leaflet; updated at least annually; informing patients about the services provided	Yes		Annual review of the inpatient & outpatient booklets. Copy of inpatient & outpatient booklets	Yes	On request
B) Facilities to be made available for ongoing staff training & development, this should include courses on attitude & incorporate agreed values as well as professional development & training		Yes	Unit personnel manager will produce an agreed & costed training programme	Yes	

Appendix D: Section 2 Generic Quality Standards Continued ...

Standard	Provider Monitoring		Reporting Mechanism	Information Distributed to:	
2.5 Other General Standards continued ...	Current Compliance	Further action required		Managing purchasers	Other purchasers
C) Facilities of procedures should be made available to ensure timely access of appropriate, diagnostic, therapeutic & other clinical support services	Yes		Patient satisfaction survey will be undertaken at least annually & an action plan will then be produced. This mechanism will be used to also monitor the other standards as appropriate	Yes	On request
D) A system of individual care planning will be developed for all patients	Yes		Annual review findings to be included within the clinical audit report	Yes	On request
E) Complaints procedure	Yes		Purchasers will be given access to the units complaints register A report of each completed complaint will be supplied to the purchaser The complaints returns will be supplied to the purchaser on a quarterly basis	On request Yes Yes	On request Yes Yes
F) Patient & purchaser satisfaction survey			Methodology for & infomration to be collected in the surveys will be agreed with the purchaser by 30 May Results of survey by 30 November	Yes Yes	N/A Yes

Appendix D: Section 3 Non Regional Speciality: Service Specific Quality Standards

	Non Regional Speciality Work											Information to:	
Service specific quality standards	General surgery	Urology	Otolaryn-gology	General medicine	Acute renal medicine	Cardiology	Clinical haematology	Rheumatology	Oral surgery	Provider monitoring	Reporting mechanism	Managing purchasers	Other purchasers
Unplanned readmission of patients with x days of discharge should not exceed x%	7 days 5%	28 days 5%	14 days 2%	28 days 10%	14 days 5%	7 days 10%	28 days 30%	7 days 5%	30 days 5%	An appropriate monitoring system is currently being implemented	Exception reporting to be incl. within audit process - annual report	Yes	On request
Hospital acquired infection should not exceed x%	5%	20%	5%	5%	5%	5%	Not appropriate	5%	10%	Hospital control of infection committee	Annual report	Yes	On request
Postoperatively no more than x% of patients should require an unplanned return to theatre	5%	5%	5%	N/A	N/A	N/A	5%	N/A	5%	FIP theatre reports	Exception reporting to be incl. with in audit process- annual report	Yes	On request
Upon receipt all GP referral letters will normally be reviewed by the consultant	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Random sample	Exception report	On request	On request
Elective patients will be given a choice of admission date	Yes	No	Yes	Yes	Yes	No	If possible	Yes	Yes	Patient satisfaction survey	Annual report	Yes	On request
Patients attending more than one out patient appointment will normally be seen by the same clinician	Yes	No	If possible	Yes	No	No	No	Yes	Yes	Patient satisfaction survey	Annual report	Yes	On request
Appointment systems in place for all patients attending a clinic with suitable slots	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Patient satisfaction survey	Annual report	Yes	On request
Waiting time from GP referral to intial out-patient appointment will not exceed: x weeks for non urgent cases/ & x weeks for urgent cases	6 weeks 1 week	52 weeks 13 weeks	10 weeks 2 weeks	4 weeks 1 week	6 weeks 1 week	4 weeks 1 week	6 weeks 1 day	16 weeks 2 weeks	4 weeks 1 week	Patient satisfaction survey	Annual report	Yes	On request

Appendix D: Section 3 Non Regional Speciality: Service Specific Quality Standards

	Non Regional Speciality Work										Information to:	
Service specific quality standards	General surgery	Urology	Otolaryn-gology	General medicine	Acute renal medicine	Cardiology	Clinical haematology	Rheumatology	Oral surgery	Provider monitoring	Reporting mechanism	Managing purchasers	Other purchasers
x% of patients will be seen in outpatients with x minutes of their appointment time	90% 45 mins	75% 60 mins	70% 40 mins	80% 30 mins	80% 30 mins	95% 60 mins	50% 30 mins	75% 30 mins	50% 30 mins	Patient satisfaction survey	Annual report	Yes	On request
x% of sampled patients will be satisfied with the clinical & non clinical information they were given in a written & verbal fashion	95%	90%	90%	80%	85%	90%	90%	75%	90%	Patient satisfaction survey	Annual report	Yes	On request
Patients to be given not less than x weeks notice of non-urgent outpatients appointment & admission dates unless patients wish to be admitted or seen at shorter notice	1 week	1 week	3 weeks	1 week	2 weeks	1 week	2 weeks	1 week	2 weeks	Patient satisfaction survey	Annual report	Yes	On request
Following a decision to admit, the maximum waiting time for admission should be x weeks for urgent cases & x weeks for non-urgent cases	2 weeks 12 weeks	26 weeks 104 weeks	4 weeks 26 weeks	1 week 4 weeks	1 week 6 weeks	< 1 week 2 weeks	3 days 4 weeks	1 week 20 weeks	3 weeks 12 weeks	Computerised waiting list Pas module	Quarterly report	Yes	Yes
There will be no more than x% hospital centres postponements due to: bed shortages, lack of anesthetist, lack of surgical time	10%	10%	10%	5%	10%	20%	10%	10%	10%	FIP theatre & medical records return	Quarterly report	Yes	On request
Care plans will be developed for the patient within x hours or admission	4 hours	24 hours	6 hours	24 hours	36 hours	4 hours	4 hours	24 hours	3 hours	FIP ward nursing	Vin clincial audit, annual report	Yes	Yes

Appendix D: Section 3 Non Regional Speciality: Service Specific Quality Standards

	Non Regional Speciality Work										Information to:	
Service specific quality standards	General surgery	Urology	Otolaryn-gology	General medicine	Acute renal medicine	Cardiology	Clinical haematology	Rheumatology	Oral surgery	Provider monitoring	Reporting mechanism	Managing purchasers	Other purchasers
Discharge arrangments will be completed x hrs before the patient leaves hospital	12 horus	4 hours	12 hours	24 horus	24 hours	12 hours	24 hours	24 hours	4 hours	Patient satisfaction survey	Annual report	Yes	Yes
GP to be notified of death within x hours	24 hours	24 hours	24 hours	24 hours	24 hours	24 hours	24 hours	24 hours	24 hours	Purchaser survey	Annual report	Yes	Yes
Patient & carer given normally not less than x hours notice of discharge unless other-wise previously agreed	12 hours	12 hours	24 hours	24 hours	12 hours	24 hours	24 hours	48 hours	12 hours	Patient satisfaction	Annual report	Yes	Yes
Patients to be usually given a note on dis-charge for their GP	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Purchaser satisfaction survey	Annual report	Yes	Yes
GP to be informed of discharge within x days	5 days	3 days	3 days	5 days	5 days	5 days	5 days	5 days	1 day	Purchaser satisfaction survey	Annual report	Yes	Yes
Discharge summaries to be posted no later than x days following discharge	7 days	10 days	7 days	10 days	14 days	7 days	14 days	7 days	7 days	Purchaser satisfaction survey	Annual report	Yes	Yes
Patient to be seen by clinical staff with appropriate expertise & experience	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Exception report	Annual audit report	Yes	On request
Only in exceptional circumstances would a patient be seen by a doctor who has not had in excess of 4 hours sleep within the preceeding 24 hours	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Junior medical staff questionnaire	Human resource strategy annual report	Yes	

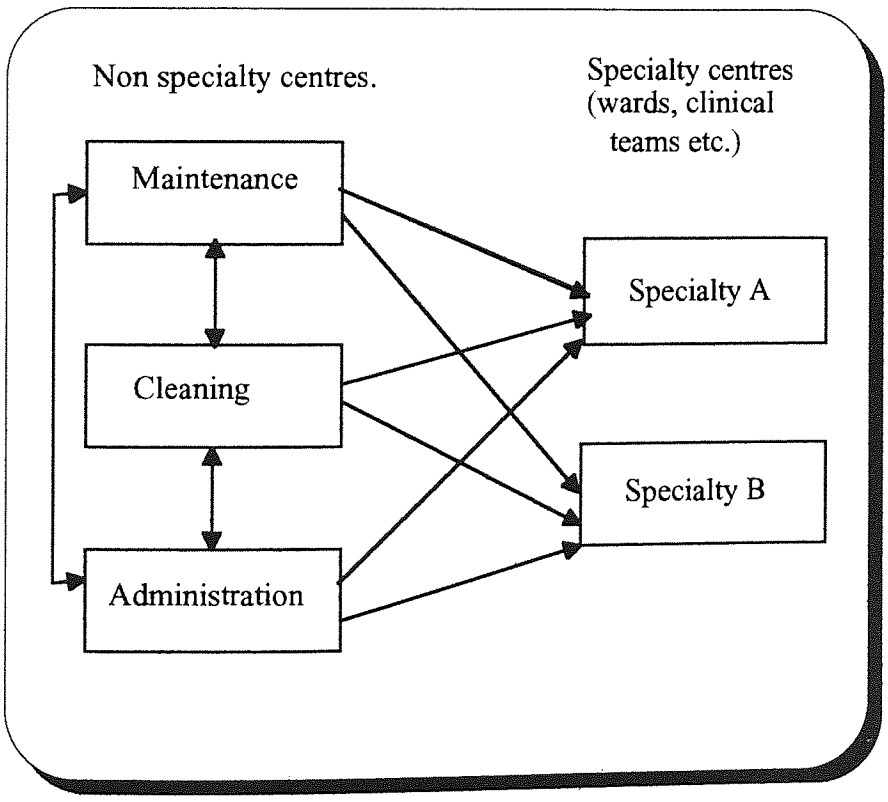
Appendix E

An Illustration of Different Methods of Cost Attribution

The four methods of cost allocation and apportionment are:

1. direct allocation
2. stepdown
3. double distribution
4. algebraic or reciprocal

Some costs can be directly costed to specialties e.g single specialty ward costs, clinical teams, the remaining costs will require a method of cost allocation and apportionment. To illustrate the different approaches a simplified hospital example is chosen with merely two specialties (contract categories) and three support departments (i.e non-specialty centres).



Activity bases: Maintenance expenses will be allocated to other departments on the amount of square footage involved. Administration expenses will be allocated based on the number of full time equivalent (FTE) employees,

Illustrative data used for cost attribution example

Department	Direct costs	Square feet	Hours est.	FTEs	Admissions
Maintenance	£200,000	10,000	1,000	12	
Cleaning	£400,000	30,000	900	10	
Administration	£300,000	20,000	1,000	10	
Specialty A	£800,000	160,000	2,000	25	400
Specialty B	£300,000	40,000	1,000	8	900
Totals	£2,000,000	260,000	5,900	65	

Direct apportionment

The costs of the support centres are attributed directly to the contract categories (specialties). This method ignores the fact that most support centres also provide services to other support centres.

Department	**Direct costs**	**Square feet**	**Hours per week**	**FTEs**	**To Specialty A**	**To Specialty B**	**Total Specialties A and B**
Support:							
Maintenance	£200,000				£160,000	£40,000	£200,000
Cleaning	£400,000				£266,667	£133,333	£400,000
Administration	£300,000				£227,273	£72,727	£300,000
Specialties:							
A	£800,000	160,000	2,000	25	£800,000		£800,000
B	£300,000	40,000	1,000	8		£300,000	£300,000
Per unit cost		£1.00	£133.3	£9,091			
Output measures							
per case					400	900	
TOTALS	**£2,000,000**	**200,000**	**3,000**	**33**	**£1,453939**	**£546,061**	**£2,000,000**

Stepdown

This method compensates for one of the weaknesses of the direct apportionment method in that it recognizes that support centres do actually provide services to other support centres. The first step is to apportion the maintenance centre costs to all other departments that have received maintenance services. The choice of using the maintenance support centre is subjective and other support services could have

been selected. In a similar manner, the order of allocation of the remaining support centres is also subjective. After this has been done the maintenance centre is considered closed, and it has no further costs allocated to it. The second step in the process is to allocate cleaning costs (which now include a portion of maintenance costs) to all the remaining departments (administration, specialty A, specialty B). After this allocation has been performed, the cleaning centre is considered closed, and it has no further costs allocated to it.The third step is to allocate the last remaining support centre (administration) to the specialties. At this point, all the support centres are considered closed since all costs have now been allocated to specialties.

Stepdown method of cost attribution

Dept.	Direct costs	Square feet	Hours	FTEs	To Maintenance	To Cleaning	To Admin.	To Specialty A	To Specialty B	Specialties A and B
Support										
Maintenance	£200,000				-£200,000	-£24,000	£16,000	£128,000	£32,000	£160,000
Cleaning	£400,000	30,000				-£424,000	£106,000	£212,000	£106,000	£318,000
Admin.	£300,000	20,000	1,000				-£422,000	£319,697	£102303	£422,000
Specialties										
A	£800,000	160,000	2,000	25				£800,000		£800,000
B	£300,000	40,000	1,000	8					£300,000	£300,000
Per unit cost		£0.80	£106	£12,788						
Cases								400	900	
Per case								£3,649	£1,351	
TOTALS	£2,000,000	250,000	4,000	33	£0	£0	£0	£1,459,697	£540,303	£2,000,000

Double or multiple distribution

The double distribution method corrects the major weakness of the stepdown method - failure to account fully for interdepartmental services. Under the double distribution method, each centre remains 'open' and costs can be reallocated to support centres. This method may use two iterations at which time all support centres are 'closed', or the iterations may be continued successively until further allocations result in immaterial changes in the allocation amounts to each support centre. in each case, the final allocation is made successively to the specialties (as in the stepdown method.

Double distribution method of cost attribution

Dept.	Direct costs	Square feet	Hours	FTEs	To Maintenance	To Cleaning	To Admin	To Specialty A	To Specialty B	Specialties A and B
Support										
First step										
Maintenance	£200,000		1,000	12	-£200,000	-£24,000	£16,000	£128,000	£32,000	£160,000
Cleaning	£400,000	30,000		10	£84,800	-£424,000	£84,000	£169,600	£84,800	£254,400
Administration	£300,000	20,000	1,000		£87,447	£72,873	-£400,800	£182,182	£58,298	£240,480
Specialties										
A	£800,000	160,000	2,000	25				£800,000		£800,000
B	£300,000	40,000	1,000	8					£300,000	£300,000
TOTALS	£2,000,000	250,000	5,000	55	£172,247	£72,873	£0	£1,279,782	£475,098	£1,754,880
Per unit cost		£0.80	£84.8	£7,287						
Second step:										
Maintenance					-£172,247	£20,670	£13,780	£110,238	£27,560	£137,798
Cleaning		30,000				-£93,542	£23,386	£46771	£23,386	£70,157
Administration		20,000	1,000				-£37,165	£28,156	£9,010	£37,165
Specialty A		160,000	2,000	25						
Specialty B		40,000	1,000	8						
TOTALS		250,000	4,000	33						
Per unit cost		£0.69	£23.39	£1,126						
cases								400	900	
cost per case								£3,662	£1,338	
TOTALS	**£2,000,000**	**250,000**	**5,000**	**55**	**£0**	**£0**	**£0**	**£1,464,947**	**£535,053**	**£2,000,000**

Algebraic or reciprocal method

This method involves the simultaneous solution of a series of equations which are mathematical representations of the known interrelationships between all centres:

1. M = £200,000 + (1/5) C + (12/55) A
2. D = £400,000 + (30/250)M + (10/55) A
3. A = £300,000 + (20/250)M + (1/5) D

Where: M = total costs of maintenance department after allocation
C = total costs of cleaning department after allocation
A = total costs of administration department after allocation

The solution is:

M = £401,019
C = £527,689
A = £437,619

These results are more objective than the results obtained using the direct, stepdown or double distribution methods because they are based on all the data.

Reciprocal method of cost attribution

	Maintenance	Cleaning	Administration	Specialty A	Specialty B	Specialties A and B
Maintenance	-£401,019	£48122	£32,081	£256,652	£64, 163	£320,815
Cleaning	£105,538	-£527,689	£105,538	£211,076	£105,538	£316,614
Administration	£95,481	£79,567	-£437619	£198,918	£63,654	£262,572
Specialty A				£800,000		£800,000
Specialty B					£300,000	£300,000
TOTALS				**£1,466,646**	**£533,355**	**£2,000,001**

Comparison of results

The results of all four methods are shown below:

	Direct	Stepdown	Double Distribution	Reciprocal
Specialty A	£3,635	£3,648	£3,662	£3,667
Specialty B	£607	$600	£595	£593
% comparisons				
Specialty A	99.13%	99.51%	99.86%	100.00%
Specialty B	102.36%	101.18%	100.34%	100%

Each method is described in percentage terms relative to the reciprocal method.

FINANCIAL RETURN FR12 : Year Ended 31/3/91

SPECIALTY COST RETURN

FR12

(page 1 of 3)

Authority Name HEREFORDSHIRE

Authority Code M 0 2

PATIENT GROUP / SPECIALTIES	Main Code / Sub Code	PATIENTS USING A BED (including day cases)			OUT-PATIENTS (including ward attenders)			DAY CARE PATIENTS		
		Expenditure 35 £	Patient days 36	Consultant / GP episodes 37	Expenditure 38 £	Total attendances 39	Referrals attendances 40	Expenditure 41 £	Total attendances 42	First attendances 43
A. MEDICAL SPECIALTIES										
(a) Paediatrics	101	802,443	6,721	1,913	105,255	4,979	781			
(b) Geriatrics	102	2,750,044	46,214	2,120	80,080	1,984	363	60,028	4,053	128
(c) Cardiology	103	182,576	1,395	154	54,783	1,929	516			
(d) Dermatology	104	99,894	949	46	96,189	4,310	1,553			
(e) Infectious Diseases	105									
(f) Medical Oncology	106									
(g) Neurology	107	6,048			11,153	408	232			
(h) Rheumatology	108	-			65,558	1,791	219			
(i) Gastroenterology	109									
(j) Haematology (Clinical)	110	60,661	566	76	50,306	3,981	105			
(k) Thoracic Medicine	111				46,240	1,314	301			
(l) Genito-Urinary Medicine	112				45,352	1,874	659			
(m) Nephrology	113									
(n) Other Medical	125	1,801,846	18,618	2,695	212,444	5,970	927			
SUB TOTAL A	199	5,703,472			767,360			60,028		

FR12A

FINANCIAL RETURN FR12 :
Year Ended 31/3/91

SPECIALTY COST RETURN

FR12

Authority Name HEREFORDSHIRE

Authority Code H 0 2

PATIENT GROUP / SPECIALTIES	Main Code / Sub Code	PATIENTS USING A BED (including day cases)			OUT-PATIENTS (including ward attenders)			DAY CARE PATIENTS		
		Expenditure	Patient days	Consultant / GP episodes	Expenditure	Total attendances	Referrals attendances	Expenditure	Total attendances	First attendances
		35	36	37	38	39	40	41	42	43
		£			£			£		
B. SURGICAL SPECIALTIES										
(a) General surgery	200	2,069,142	18,274	2,878	116,894	6,428	2,459			
(b) Urology	201	476,988	3,222	644	49,318	2,073	852			
(c) Orthopaedics	202	1,843,939	16,666	2,397	442,461	15,204	3,640			
(d) ENT	203	400,335	3,168	877	170,173	5,865	1,841			
(e) Ophthalmology	204	541,286	3,111	909	168,949	11,692	1,388			
(f) Gynaecology	205	505,570	5,961	1,846	71,596	5,328	2,131			
(g) Dental Specialties	206	214,618	828	365	124,145	3,961	1,125			
(h) Neuro surgery	207									
(i) Plastic surgery	208	152,350	881	94	15,901	1,939	466			
(j) Cardiothoracic surgery	209									
(k) Paediatric surgery	210									
SUB TOTAL B	299	6,204,228			1,159,437					
C. MATERNITY FUNCTION										
(a) Obstetrics	301	1,418,207	8,837	2,417						
(b) General practice	302	69,516	594	225						
SUB TOTAL C	399	1,487,723								
D. PSYCHIATRIC SPECIALTIES										
(a) Mental handicap	401	1,175,512	16,731	1,702	28,859	701	41	40,594	2,633	5
(b) Mental illness	402	2,511,384	38,193	551	67,364	1,611	284	143,007	5,983	306
(c) Child and adolescent psychiatry	403									
(d) Forensic psychiatry	404									
(e) Psychotherapy	405					1				
(f) Old age psychiatry	406	467,826	11,270	232				43,762	2,487	50
SUB TOTAL D	499	4,154,722			96,223			227,363		
TOTAL B to D	500	11,846,673			1,255,660			227,363		

FR12B

FINANCIAL RETURN FR12 :
Year Ended 31/3/91

SPECIALTY COST RETURN

FR12 (page 3 of 3)

Authority Name HEREFORDSHIRE *Authority Code* M 0 2

PATIENT GROUP / SPECIALTIES	Main Code / Sub Code	PATIENTS USING A BED (including day cases) Expenditure 35 £	Patient days 36	Consultant / GP episodes 37	OUT-PATIENTS (including ward attenders) Expenditure 38 £	Total attendances 39	Referrals attendances 40	DAY CARE PATIENTS Expenditure 41 £	Total attendances 42	First attendances 43
E. OTHER SPECIALTIES										
(a) General practice (other than maternity)	501	950,034	22,310	1,465						
(b) Radiotherapy	502				56,137	2,761	319			
(c) Pathology specialties and radiology	503									
(d) Anaesthetics	504									
(e) A and E	505	68,347	72	41	258,071	18,949				
SUB TOTAL E	599	1,018,381			314,208					
TOTAL A to E	600	18,664,476			2,337,228			287,391		
F. SUPRA DISTRICT SERVICES										
(a) Renal dialysis and transplant	601									
(b) Open heart surgery	602									
SUB TOTAL F	699									
G. SUPRA REGIONAL SERVICES										
(a)										
(b)										
(c)										
(d)										
(e)										
SUB TOTAL G	799									
TOTAL F & G	800									
TOTAL A to E plus F & G	850	18,664,476			2,337,228			287,391		

FR12C

OTHER PATIENT GROUPS	Main Code / Sub Code	Expenditure 44 £	Attendances 45	New Cases 46
Patients using Accident and Emergency Services	801	[illegible]	[illegible]	35,411

FR12D

SUMMARY OF EXPENDITURE FOR ALL PATIENT GROUPS

PATIENT GROUPS:	Main Code / Sub Code	47 £
Patients using a bed	900	18,664,476
Out patients	901	[illegible]
Day care patients	902	287,391
Patients using A & E (sub code 801)	903	628,128
	[illegible]	21,917,223

FR12E

SUPRA DISTRICT / REGIONAL SERVICES EXPENDITURE IDENTIFIED BY SPECIALITY

	£
1	
2	
3	
4	
5	
6	

Haematology Standard Costs

Set Code	Workload est 91/92	Direct consumables Variable £	Direct consumables Fixed £	Indirect consumables £	Total non pay £	Direct labour £	Indirect labour £	Total pay £	Total per set £
A2	18	12.20	0.01	0.14	12.34	9.82	1.10	10.92	23.26
ACL	10	1.17	0.00	0.14	1.31	0.00	1.10	1.10	2.40
ADP	2	0.15	0.01	0.14	0.29	19.31	1.10	20.41	20.70
ADS	3	9.68	0.01	0.14	9.82	19.31	1.10	20.41	30.23
APTT	1189	0.50	0.01	0.14	0.64	1.05	1.10	2.15	2.79
AT3	14	1.17		0.14	1.31	0.00	1.10	1.10	2.40
B12	1424	0.22	0.01	0.14	0.37	0.70	1.10	1.80	2.17
BT	21	2.61	0.01	0.14	2.75	1.68	1.10	2.78	5.53
C	2	1.17	0.01	0.14	1.31	2.10	1.10	3.20	4.52
CAG	12	0.00	0.01	0.14	0.14	7.24	1.33	8.58	8.72
COIT	12	0.05	0.01	0.14	0.19	1.40	1.10	2.50	2.69
D	9801	0.11	0.04	0.14	0.29	0.56	1.10	1.66	1.95
EPREG	45	2.33		0.14	2.47	2.10	1.10	3.20	5.67
FDP	71	4.69	0.01	0.14	4.84	2.81	1.10	3.90	8.74
FERT	194	0.45	0.01	0.14	0.59	2.81	1.10	3.90	4.49
FIB	11	5.96	0.01	0.14	6.10	3.51	1.10	4.60	10.71
FVIII	13	19.76	0.01	0.14	19.90	57.94	1.10	59.04	78.94
FVIIIR	5	14.53	0.01	0.14	14.67	69.76	1.10	70.85	85.53
HCG	4	2.41	0.01	0.14	2.56	2.38	1.10	3.48	6.04
HBELEC	3	3.64	0.01	0.14	3.78	24.14	1.10	25.24	29.02
HP	16	2.93	0.01	0.14	3.07	2.81	1.10	3.90	6.97
HT	4	0.00	0.01	0.14	0.14	7.24	1.33	8.58	8.72
IM	1113	1.20	0.01	0.14	1.35	0.70	1.10	1.80	3.15
INR	19	0.30	0.01	0.14	0.44	0.70	1.10	1.80	2.24
LAP	11	4.37	0.01	0.14	4.51	7.85	1.10	8.95	13.46
LECELL	10	0.29	0.01	0.14	0.43	4.21	1.10	5.31	5.73
MAR	55	1.89	0.01	0.14	2.03	32.66	1.10	33.76	35.79
PREG	3682	0.34	0.01	0.14	0.49	0.56	1.10	1.66	2.15
PROTC	5	1.17		0.14	1.31	0.00	1.10	1.10	2.40
PROTCA	4	1.17	0.00	0.14	1.31	0.00	1.10	1.10	2.40
PROTS	3	1.17		0.14	1.31	0.00	1.10	1.10	2.40
PROTSA	5	1.17		0.14	1.31	0.00	1.10	1.10	2.40
PT	1219	0.30	0.01	0.14	0.44	0.70	1.10	1.80	2.24
PV	22353	0.07	0.03	0.14	0.24	0.49	1.10	1.59	1.83
G	1506	0.34	0.01	0.14	0.48	0.70	1.10	1.80	2.28
RETIC	150	0.11	0.01	0.14	0.25	0.98	1.10	2.08	2.33
RIST	5	3.60	0.01	0.14	3.74	27.73	1.10	28.83	32.57
RW	14	1.17	0.00	0.14	1.31	0.00	1.10	1.10	2.40
SOL	13	0.01	0.01	0.14	0.16	1.68	1.10	2.78	2.94
SP	58973	0.12	0.12	0.14	0.38	0.45	1.10	1.55	1.92
TT	7187	0.31	0.01	0.14	0.45	0.98	1.10	2.08	2.53
UH	4	0.06	0.01	0.14	0.20	2.81	1.10	3.90	4.11
VAS	534	0.32	0.01	0.14	0.47	0.70	1.10	1.80	2.28
TOTAL HAEMATOLOGY	109739								

Kaiser Foundation Hospitals, Medical Group
& UCLA Medical Centre

Exhibit A: Fee Schedule - Liver Transplantation Services, 21 February 1991

Liver Transplants:

a) Hospital Component - Adults & Pediatrics

The inpatient admission during which a liver transplant is performed:

- For total usual and customary charges less than $160,000, hospitals shall pay $105,000.
- For total usual and cusomary charges greater than $160,000, and equal to or less than $180,000, hospitals shall pay $120,000.
- For total usual and customary charges greater than $180,000, and less than $200,000, hospitals shall pay $140,000.
- For total usual and customary charges greater than $200,000, and less than $220,000, hospitals shall pay $160,000.
- For total usual and customary charges $220,000, or greater, hospitals shall pay 85% of charges.

+ the above stated "per case rates" include 4 pre-operative inpatient days. All other additional pre-operative days are reimbursed at a per diem rate of $1,500.

+ The rates include retransplants if performed during the same admission.

+ All usual and customary charges are those in effect as of the commencement date of this Agreement.

For the cost of procuring a donor organ from the Regional Organ Procurement Centre (ROPA) with ROPA invoice copy, hospitals shall pay 100% of ROPA charges.

For inpatient or outpatient hospital services associated with patient evaluation prior to surgery, or for follow-up care, hospitals shall pay 80% of usual and customary charges in effect at the commencement date of this Agreement.

B) Professional Component - Adults and Pediatrics

1) Pre-Transplant Services

For services provided during the pre-transplant phase, Medical Group shall compensate for all physician services at 85% of charges. The pre-transplant phase shall be defined as the period of time from referral of the Kaiser member through the fifth day prior to transplantation. Four pre-operative days are included in the transplant admission case rate for both physicians and UCLA Medical Centre.

2) Transplant Services

a) Adults

For services provided during the transplant admission for adult cases, Medical Group shall compensate for all physician services at the following case rates:

Medicine & dermatology	$6,515
Psychiatry	$650
Neurology	$150
Surgery	
- surgeon	$13,000
- assistants, limit of two per procedure	$2650 each
Anesthesiology	$4,800
Radiology	$1,600
Pathology	$800

If a retransplant is necessary during the same admission for adult cases, Medical Group shall compensate for all physician services at the following case rates, in addition to the case rates stated immediately above:

DMPG, medicine & dermatology	$2,215
Psychiatry	$221
Neurology	$50
Surgery	
- surgeon	$8,710
- assistants, limit of two per procedure	$1775 each
Anesthesiology	$4,800
Radiology	$1,600
Pathology	$800

b) Pediatrics:

For services provided during the transplant admission for pediatric cases, Medical Group shall compensate for all physician services at the following case rates:

Medicine & dermatology $7,450
Psychiatry.....$350
Neurology.....$150
Surgery
- surgeon $13,000
- assistants, limit of two per procedure .....$650 each
Anesthesiology.....$4,000
Radiology $1,600
Pathology $800

If a retransplant is necessary during the same admission for pediatric cases, Medical Group shall compensate for all physician services at the following rates, in addition to the case rates stated immediately above:

Medicine & dermatology $2,533
Psychiatry.....$150
Neurology.....$50
Surgery
- surgeon $8710
- assistants, limit of two per procedure .....$1,775 each
Anesthesiology.....$4,800
Radiology $1,600
Pathology $800

The transplant admission shall include up to four days care prior to the transplant procedure, and shall terminate upon discharge of the patient from the hospital for the transplant procedure. Additional pre-operative days shall be compensated as part of the pre-transplant phase.

3) Post-Transplant Services

For one year after discharge from the transplant admission, Medical Group shall compensate for all physician services at 85% of charges.

If a retransplant is necessary after discharge from the initial transplant admission, the retransplant will be considered a separate case and the above stated case rates will apply.

Appendix I

GP Fundholder Prices in 1991/92 *West Midlands Health Region*

Procedure		Average £	High £	Low £	Range £	CV %
General Surgery						
Partial Thyroidectomy	35	1079	1732	709	1023	23
Total Thyroidectomy	36	1284	2602	709	1893	36
Aberrant Thyroid Gland	37	945	1920	231	1689	36
Salivary Gland	38	714	958	176	782	26
Parathyroid Gland	39	1087	1819	425	1394	25
Oesophagoscopy	40	370	1057	91	966	58
Dilation of Oesophagus	41	592	3829	175	3654	117
Operation on Oesophagus	42	1623	3079	175	2904	62
Gastrectomy	43	2882	6531	958	5573	40
Vagotomy	44	1584	3504	775	2729	38
Endoscopy	45	359	1106	91	1015	67
Laparoscopy	46	370	577	188	389	28
Small Intestine lesion	47	1567	3261	869	2392	32
Part Colectomy	48	2510	3668	958	2710	26
Total Colectomy	49	2772	4968	958	4010	27
Sigmoidoscopy	50	568	1121	91	1030	56
Colonoscopy	51	448	958	136	822	52
Ext. of Bowel	52	2399	5474	527	4947	44
Prolapsed rectum	53	1780	2897	922	1975	31
Anal Fissure	54	554	1007	91	916	43
Rectum excision	55	2899	5503	958	4545	32
Pilonidal sinus	56	785	2128	459	1669	45
Dilation of anal sphincter	57	320	958	91	867	56
Haemorrhoidectomy	58	782	1276	213	1063	29
Gall bladder	59	1408	2536	638	1898	32
Bile ducts	60	2193	3794	958	2836	29
Masectomy	61	1382	2464	637	1827	33
Breast leision	62	497	1277	231	1046	44
Inguinal hernia	63	671	1795	303	1492	43
Femoral hernia	64	778	1719	351	1368	40
Incisional hernia	65	1295	2433	175	2258	37
Varicose veins	66	544	1278	287	991	38
Ingrowing toenail	67	236	656	91	565	44
Skin biopsy	68	363	1165	91	1074	64
Lymph node excision	69	518	958	213	745	35
Ophthalmology						
Squint	1	498	917	303	614	36
Chalazion	2	311	958	134	824	64
Pteryguim	3	351	958	177	781	55
Ectropion	4	454	958	199	759	37
Glaucoma	5	967	1738	504	1234	43
Nasolacrimal	6	572	1007	198	809	38
Cataract	7	991	1696	426	1270	39
Corneal	8	1251	2950	588	2362	45
Retinopathies	9	343	1076	135	941	62
Orthopaedics						
Intervertebral discs	99	1806	2756	958	1798	25
Lumbar injection	100	349	958	127	831	63
Arthroplasty	101	3370	8051	692	7359	42
Implanted bone substance	102	793	1611	270	1341	50
Tibial osteotomy	103	1640	2859	263	2596	43
Arthroscopy	104	488	1165	163	1002	48
Intra articular injections	105	312	958	49	909	69
Meniscectomy	106	658	1906	124	1782	48
Osteotomy	107	743	1377	374	1003	32
Hammer toe	108	520	985	187	798	43
Dupuytren's contracture	109	494	876	124	752	41
Carpal tunnel	110	370	958	124	834	54
Trigger finger	111	342	807	124	683	53
Ganglion	112	284	740	124	616	54
Bursa	113	350	958	127	831	49

Procedure		Average £	High £	Low £	Range £	CV %
ENT						
Myringotomy	10	314	569	102	167	39
Grommet	11	301	569	102	467	39
Mastoidectomies	12	1194	2088	569	1519	37
Stapedectomy	13	1067	1990	236	1754	37
Tympanoplasty	14	1002	2121	107	2014	47
Labyrinthectomy	15	1640	2548	914	1634	36
Septoplasty	16	759	1190	506	684	25
Sub-mucous	17	648	1097	303	794	31
Polypectomy	18	454	794	268	526	30
Ethmoidectomies	19	1006	2256	614	1642	44
Turbinectomy	20	576	958	319	639	26
Nasal Mucosa	21	314	958	93	865	62
Maxillary antrum	22	402	958	102	856	52
Maxillary sinus	23	526	1069	93	976	59
Frontal sinus	24	1004	1422	609	813	19
Tonsillectomy	25	573	958	143	815	36
Adenoidectomy	26	471	958	143	815	38
Pharyngoscopy	27	358	958	143	815	48
Laryngoscopy	28	387	537	192	345	27
Laryngectomy	29	4145	6344	958	5386	35
Block dissection	30	2245	4054	958	3096	49
UROLOGY						
Cystoscopy	70	397	844	176	708	43
Urethrotomy	71	427	851	140	711	40
Urethroplasty	72	1380	3028	638	2390	48
Open repair	73	1321	2163	621	1542	36
Prostatectomy	74	1560	3012	656	2356	34
Hydrocele	75	461	705	213	492	26
Orchidopexy	76	404	1513	134	1379	62
Male sterilisation	77	257	958	134	824	57
Circumcision	78	300	340	134	406	33
Varicocele	79	442	958	223	735	33
Ureteric removal	80	1334	2495	608	1887	42
Lithotripsy	81	730	1176	638	538	19
Nephrectomy	82	1987	3393	918	2475	29
GYNAECOLOGY						
Oophorectomy	83	1251	1765	742	1023	25
Ovarian cystectomy	84	1222	2112	742	1370	30
Wedge resection of ovary	85	1055	2227	192	2035	38
Diagnostic Laparoscopy	86	366	731	122	609	45
Female Sterilisation	87	365	958	127	931	43
Fallopian tubes	88	316	555	122	433	36
Hysterectomy	89	1522	2266	854	1412	25
Myomectomy	90	1298	1860	353	1507	30
D and C	91	265	541	122	419	36
EUA	92	331	556	173	383	38
Hysteroscopy	93	419	556	253	303	28
Cone biopsy	94	483	991	253	738	35
Colposcopy	95	246	517	96	421	36
Repair	96	1347	1966	240	1726	31
Vulvectomy	97	2438	5377	407	4970	53
Bartholin's cyst	98	335	958	122	836	48

Fixed

Price

Care 1991

BUPA South Bank Hospital
139 Bath Road
Worcester WR5 3AG
Telephone: (0905) 350003

BHL/008A/90 (South Bank)

	L. O. S.	HOSP	CONS	ANAES	TOTAL
DENTAL					
Dental Clearance/ Unerrupted Teeth	1	520	285	125	930
Wisdom Teeth Removal	1	520	285	125	930
E. N. T.					
Grommets Uni-Lateral	1	530	285	125	940
Grommets Bi-Lateral	1	700	355	155	1210
Nasal Polypectomy	1	400	150	70	620
Tonsillectomy	2	725	285	125	1135
Tonsillectomy, Adenoids and Grommets	2	900	355	155	1410
S. M. R.	5	1340	285	125	1750

280191
IST/SR

HOSPITAL.....

1991/92 CONTRACTS

1. How many purchasers hold contracts with the hospital?

	Number
HAs	
GPFHs	
Other	

2. Please analyse the contracts negotiated by contract category:

Contract Category	Percentage of hospital 1991/92 contract income
Block	
Block with indicative volume	
Cost and volume	
Cost per case	
Other: ***please specify***	
.....	
.....	
TOTAL	100%

3. At what level have **contracted** services been priced?

	All contracts	Some contracts *(please specify)*
Unit-wide specialty costs		→ .....
Hospital specialty costs		→ .....
Procedure costs		→ .....
Other: ***please specify***		
.....		→ .....
.....		→ .....

4. What was the start-point for the compilation of contract costs?

Actual 1989/90 costs - FR 12 (specialty) ☐

Actual 1989/90 costs - FR 11 (department) ☐

1990/91 budget allocations ☐

Other: ***please specify*** .....

5. Were the following costs attributed to patient treatment departments (eg. operating theatres; pathology; radiology)

	YES All depts.	NO All depts.	YES Some depts. *(please specify)*
Domestic cleaning	☐	☐	☐ → .....
Portering	☐	☐	☐ → .....
Transport	☐	☐	☐ → .....
Energy & utility	☐	☐	☐ → .....
Estate maintenance	☐	☐	☐ → .....
Capital charges: equipment	☐	☐	☐ → .....
buildings	☐	☐	☐ → .....
land	☐	☐	☐ → .....

6. Which system was used to faciltiate compilation of the contract costs?

S.E. Staffordshire HA model ☐

In-house design linked spreadsheets ☐

Other: ***please specify*** .....

.....

7. How were the financial effects of planned changes in workload assessed:

Systematic analysis of fixed and variable components	☐
Differential analysis of changes in the total cost of services	☐
Other: please specify	

COST MANAGEMENT SYSTEMS

8. Does the hospital have a case-mix management system?

Yes ☐ No ☐

9. Please indicate the availability, type and current usage of departmental costs systems:

	Departmental system		Type of cost held in the system		Usage			
	Operational 1989/90	Since 1989/90	Standard	Actual	Costs not used	Specialty Cost Analysis	Budget Reports	Costs fed to Case-mix
Nursing	☐	☐	☐	☐	☐	☐	☐	☐
Pharmacy	☐	☐	☐	☐	☐	☐	☐	☐
Theatre	☐	☐	☐	☐	☐	☐	☐	☐
Pathology	☐	☐	☐	☐	☐	☐	☐	☐
Radiology	☐	☐	☐	☐	☐	☐	☐	☐
Other: ***please specify***	☐	☐	☐	☐	☐	☐	☐	☐
.....	☐	☐	☐	☐	☐	☐	☐	☐
.....	☐	☐	☐	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐	☐	☐	☐

EXTRA CONTRACTUAL REFERRALS (ECRs)

10. What was the costing methodology used for setting the prices of ECRs?

	All Specialties	Some Specialties	*(please specify)*
Unmodified contract pricing methodology expressed in FCEs, in patient days or day cases	☐	☐ →	.....
Contract prices further analysed by:			
- sub-specialties	☐	☐ →	.....
- groupings according to major, minor cases etc	☐	☐ →	.....
Other: ***please outline***	☐	☐ →	.....

GP FUNDHOLDER PROCEDURE COSTS

11. Please indicate the cost components **separately** identified in the pricing methodology:

- Average specialty cost per in-patient day ☐
- Operating theatre costs ☐
- Drugs ☐
- Prosthesis ☐
- Other: please specify
  - ..... ☐
  - ..... ☐
  - ..... ☐

12 (a) Were procedures grouped into bands for pricing purposes?

Yes ☐

No ☐ → PLEASE GO TO QUESTION 13

(b) Please explain how relative cost groupings were determined:

.....

.....

.....

.....

.....

.....

HOSPITAL COST & INCOME STRUCTURE

13. a) What is the planned total hospital cost for 1991/92 (ie. including general service overhead, DHA and RHA services and capital charges) at 1991/92 pay and prices.

£ 000s .....

b) Please analyse the above total cost over the following cost elements:

Cost Element	% of total cost
* Direct patient care	
* General service overheads	
* DHQ services	
Recharged RHA services (eg. BTS, supplies etc.)	
Capital charges/ Depreciation + 6% return	
Other: please specify	
.....	
TOTAL	100%

* As defined in the Annual Accounting Statements. Please include costs relating to Working Paper 10.

14. Please analyse the hospital income over the following categories (defined in the Financial Planning Manual):

Income Category	% of Total Income
a) Direct patient care (FIXED) - block contracts; the floor level of costs and volume contracts etc.	
b) Direct patient care (VARIABLE) - cost per case contracts ECRs, private patients etc.	
c) Not-direct patient care - Working Paper 10, SIFT, etc.	
TOTAL	100%

15. Please state significant factors; which are likely to give rise to exceptional costs for the hospital services eg. unusually high level of donated assets; abnormal case complexity within certain specialties etc.

.....

.....

.....

.....

.....

FINALLY

16. Is there any other information you would like to provide about the hospital's existing or future costing/pricing approach?

.....

.....

.....

.....

.....

.....

Completed by: Name.....**Telephone no**.....

THANK YOU VERY MUCH FOR YOUR HELP

PLEASE RETURN THE COMPLETED QUESTIONNAIRE IN THE ENCLOSED PREPAID ENVELOPE TO:

Mrs Sheila Ellwood
Finance and Strategy Research Centre
Aston Business School
Aston University
BIRMINGHAM B4 7ET

Telephone number 021 359 3011 extension 4723

APPENDIX L

CAPITAL CHARGES

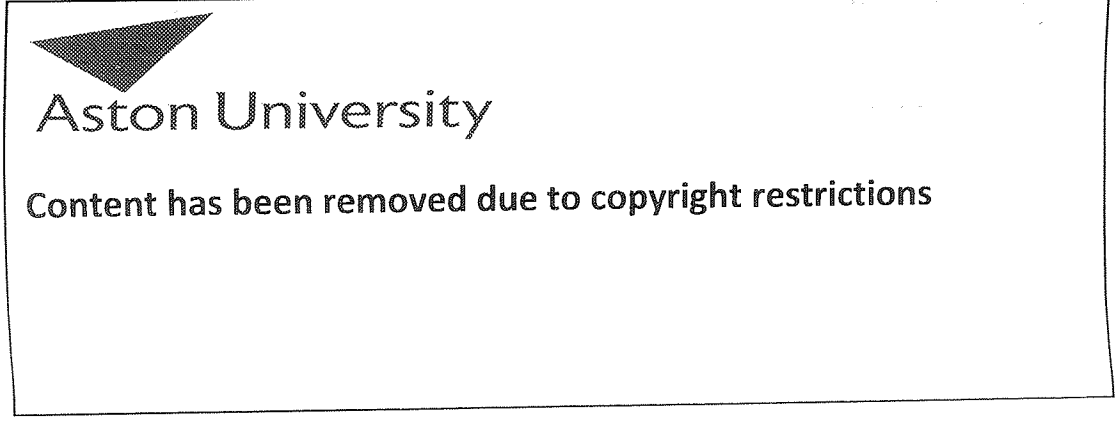
1. Introduction and Objectives

Extract from *Introductory Guide to NHS Finance in the UK*, HFMA/ CIPFA (1993)

IN-PATIENT

1994/95 GPFH PROCEDURE PRICES WEST MIDLANDS REGION

GPFH Procedures	Number of DMUs/ Trusts	Average Price £	Highest Price £	Lowest Price £	Range £	CV %



Excision of Bowel	25	2,651	2437	874	1563	26
Prolapsed Rectum	24	1,653	2437	381	670	24
Haemorrhiodectomy	24	779	1051			

GENERAL SURGERY cont'd	No.	Average £	Highest £	Lowest £	Range £	CV %
Anal Sphincter	15	400	706	205	501	24
Pilonidal Sinus	21	608	852	425	427	32
Anal Fissure	22	592	1143	335	808	23
Gall Bladder	24	1,462	[illegible]			

DAY CASES

1994/95 GPFH PROCEDURE PRICES WEST MIDLANDS REGION

GPFH Procedures	Number of DMUs/ Trusts	Average Price £	Highest Price £	Lowest Price £	Range £	CV %
Sigmoidoscopy	24	218	485	99	386	21
Colonoscopy	24	263	536	109	427	24
Exteriorisation of Bowel	2	390	600	179	421	50
Prolapsed Rectum	4	393	600	179	421	38
Haemorrhiodectomy	20	293	446	179	267	28

GENERAL SURGERY cont'd/		£	£	£	£	%
Anal Sphincter	22	243	485	60	425	19
Pilonidal Sinus	16	278	485	179	306	28
Anal Fissure	25	264	485	154	331	24
Gall Bladder	2	390	600	179	421	50

Aston University

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[illegible]	[illegible]	[illegible]	465	163	302	26
Ganglion	27	265	494	69	425	21
Bursa	25	279	396	267	129	37
Tibial Osteotomy	4	319				

HFMA - West Midlands
COSTING AND PRICING CONTRACTS (ACUTE SERVICES)

Provider Unit/ NHS Trust .....

1993/94 Contracts

1 How many purchasers hold contracts with the hospital?

Type	Number
DHAs	
GPFHs	
Other	

2 Did the Trust/ Unit identify costs by behaviour before the 1994/95 contract pricing round?

Yes	No

COST ANALYSIS	
Fixed costs	
Semi fixed costs	
Variable costs	

Was this analysis made available to purchasers?

All purchasers	
Host DHA	
All GPFHs	
Some DHAs/GPFHs	
No purchasers	

Question 3

3 Please analyse the acute services income below:

CONTRACT TYPE AND ECR	% INCOME 93/94
DHAs:	
Block	
Block with indicative volume	
Cost and volume	
Cost per case	
GPFHs:	
Block	
Block with indicative volume	
Cost and volume	
Cost per case	
ECRs	
TOTAL CONTRACT & ECR	100 %

1994/95 Contracts

4 In 1993, NHSME guidance* set out a staged approach to cost attribution and minimum standard apportionment bases for the treatment of indirect and overhead costs. What revision to your cost attribution process was required as a result of this guidance?

Major revision ☐

Substantial revision ☐

Minor revision ☐

No revision ☐

* EL(93)26; FDL(93)51; EL(93)62; FDL(93)59.

Please specify main areas of revision .....
.....
.....
.....
.....

5 What is the Trust/ Unit's gross quantum of cost? (i.e to be recovered from all sources) £.....m

6 Did the costing guidance lead to significant shifts in costs and prices between purchasers?

Yes	No

Cost shift/ change in contract quantum	No. of Purchasers
	> £100,000
	> £500,000
	>£1,000,000

Question 7

7 Did you have difficulty in analysing costs into direct, indirect and overhead costs?

Yes	No

Please state specific examples:
.....
.....
.....
.....
.....
.....

Question 8

8 Did you have difficulty in classifying costs as fixed, variable and semi-fixed?

Yes	No

Please state specific problem areas:
.....
.....
.....
.....
.....

Question 9

9 Did you regroup the budgets into nationally recognised categories, i.e. "TFR1/ HFR21 Hospital and Community Services - Departmental Analysis" before allocation and apportionment of costs?

Yes	
No	

Why did you not "regroup" the budgets?

.....

.....

.....

.....

Question 10

10 Were the following support service costs attributed to contracts using a staged approach (i.e attributed via patient treatment services - pathology, radiology, theatres etc.)?

Department	Via PTS	Direct to specialty
Domestic		
Catering		
Laundry/linen		
Portering/ transport		
Engineering maintenance		
Building maintenance		
Energy/ water etc		
Site overheads		
General management		

11 Was a percentage uplift applied to the specialty costs to cover general overhead items?

Yes	No

What percentage uplift was used? .....%

What were the main cost items included in the percentage uplift?

.....

.....

.....

Question 12

12 Have you had to use less than the minimum standard of apportionment?

Yes	No

Please state the cost items for which you have had to use less than the minimum standard and the base used:

.....
.....
.....
.....
.....

Question 13

13a) What was the overall distribution of costs by behaviour (for all specialties) ?

COST BEHAVIOUR	%
Variable	
Semi-fixed	
Fixed	
TOTAL	100%

b) Please state the specialties with the highest and the lowest proportion of variable costs:

SPECIALTY	% Variable
Highest variable costs	
Lowest variable costs	

14a) What was the overall distribution of costs by type: direct, indirect and overhead ?

COST TYPE	%
Direct	
Indirect	
Overhead	
TOTAL	100%

14b) Please state the specialties with the highest and the lowest proportion of direct costs:

SPECIALTY	% Direct
Highest direct costs	
Lowest direct costs	

15 What software did you use to compile contract costs and prices?

SAPPS (Specialty & Procedure Price)	
The Accountant - SECTA	
Thorn EMI DRG Cost Model	
Bradford Calderdale	
Other, please specify	

16 Have you had to acquire additional resources to apply the NHSME guidance on costing for pricing?

Yes	No

Additional Resource	Recurring Cost £	Non-recurring Cost £
Staff		
Computer equipment		
Software		

Question 17

17 Do you regard your existing cost and information systems adequate for meeting the NHSME guidance for 1994/95 contracts?

Yes	
No	

What are the main deficiencies and what action are you taking to overcome them?

.....
.....
.....
.....

Question 18

18 Does the Unit/ Trust have the following systems?

COMPUTER SYSTEM	Yes	No
Case-mix management system		
Nursing dependency		
Pharmacy costing		
Theatre costing		
Pathology costing		
Radiology costing		

19 Do you regard your existing cost and information systems adequate for meeting NHSME outline guidance on contracting by contract categories below specialty level ?

Yes	
No	

What are the main deficiencies?

.....
.....
.....
.....
.....
.....

Question 20

20 In compiling GP fundholder procedure prices, please identify the cost components <u>separately</u> identified in the costing methodolgy:

COST COMPONENT	Yes	No
Average specialty cost per day		
Theatre costs		
Drugs		
Prosthesies		
Other, please specify,.....		

21 Does the Trust/ Unit charge purchasers, other than GP fundholders, prices calculated at below specialty level?

Yes	No

Please state the specialties for which charges other than average specialty prices apply and the nature of the sub-specialty analysis (e.g.GPFH procedures; banding for major intermediate and minor treatments etc.):

SPECIALTY	Nature of sub-specialty groups

THANK YOU FOR YOUR COMPLETING THE QUESTIONNAIRE

PLEASE SEND COMPLETED QUESTIONNAIRES TO:

Mrs Sheila Ellwood,
Corporate Management Division,
Aston Business School,
Aston University,
BIRMINGHAM B4 7ET

TO BE RECEIVED BY 14 JANUARY, 1994.

APPENDIX A

COST CLASSIFICATION AND COST ANALYSIS

The minimum standard cost classification and cost analysis for 1994/95 contracts has been developed by the NSGC (National Steering Group on Costing) and has built on the previous work of the HFMA in their document "Guide to Good Practice Costing: Marginal Costing" (Sept. 1992) by:

- **the addition of a cost analysis;**
- **changing a large proportion of the classifications specified, mainly from fixed to semi-fixed.**

The application of these standards will be a major step towards ensuring a consistent framework for contracting, thereby enabling both purchasers and providers to have a degree of confidence in the analysis of costs and cost behaviour changes in response to fluctuating activity levels. **This appendix must be read in conjunction with the relevant paragraphs of the main text.**

General Notes

The classification and analysis detailed below follows the current subjective analysis and it is recognised that this oversimplifies the classification in some areas. Where providers are able, they should analyse costs at a lower level to improve the level of classification/analysis achieved.

For example:

305 - Medical & Surgical Equipment - Purchases
should be capable of being split between :

Purchases - Equipment - Semi-Fixed
- Consumables - Variable

GENERAL AND SENIOR MANAGERS

Sub-Code	Description	Classification	Typical Analysis
002	Unit and other General Managers	Fixed	Overhead
003	Senior Managers' Pay - Board level	Fixed	Overhead
004	Senior Managers' Pay - Other	Fixed	Overhead

MEDICAL (Note 1)

006	Consultants	Fixed	Direct
007	SHMOs, Medical Assistants	Fixed	Direct
008	Associate Specialists	Fixed	Direct
009	Staff Grade Practitioners	Semi-Fixed	Direct
010	Senior Registrars	Semi-Fixed	Direct
011	Registrars	Semi-Fixed	Direct
012	Senior House Officers	Semi-Fixed	Direct
013	House Officers	Semi-Fixed	Direct
014	Hospital Practitioners	Semi-Fixed	Direct
015	Clinical Assistants and sessions in BTS	Semi-Fixed	Direct
016	Staff Fund Payments	Semi-Fixed	Direct
017	Senior Clinical Medical Officers	Semi-Fixed	Direct
018	Clinical Medical Officers	Semi-Fixed	Direct
021	Sessional CHS Appointments	Semi-Fixed	Direct
022	Clinical Representatives on Management Teams	Fixed	Overhead

DENTAL

026	Hospital Consultants	Fixed	Direct
027	SHDOs, Assistant Dental Surgeons	Fixed	Direct
028	Associate Specialists	Fixed	Direct
029	Staff Grade Practitioners	Semi-Fixed	Direct
030	Senior Registrars	Semi-Fixed	Direct
031	Registrars	Semi-Fixed	Direct
032	Senior Dental House Officers	Semi-Fixed	Direct
033	Dental House Officers	Semi-Fixed	Direct
034	Dental Practitioners	Semi-Fixed	Direct
036	Community Health SDOs and DOs	Fixed	Direct
037	Trainees in Community Dentistry	Fixed	Direct

NURSES AND MIDWIVES (Note 1)

Sub-Code	Description	Classification	Typical Analysis
041	Senior Nursing Staff (Regional Nursing Officer, Regional Nurse, District Nursing Officer and Directors of Nursing Services)	Fixed	Overhead
042	Senior Nurses 1 to 5 (including Senior Tutors)	Fixed	Overhead
043	Senior Nurses 6 plus Grades H and I	Semi-Fixed	Direct
044	Grades F and G	Semi-Fixed	Direct
045	Grades D and E	Semi-Fixed	Direct
046	Grade C	Semi-Fixed	Direct
047	Grade B	Semi-Fixed	Direct
048	Grade A	Semi-Fixed	Direct
049	Student/Pupil Nurses	Fixed	Direct

PROFESSIONS ALLIED TO MEDICINE

061	Professions allied to medicine (excluding Speech Therapists)	Semi-Fixed	Indirect

Note 1: In some units certain medical and nursing staff may be shared between specialties in which case they will be allocated as an indirect cost to those specialties.

PROFESSIONAL AND SCIENTIFIC STAFF

062	Speech Therapists	Semi-Fixed	Indirect
063	Biochemists	Semi-Fixed	Indirect
064	Physicists	Semi-Fixed	Indirect
065	Clinical Psychologists	Semi-Fixed	Indirect
066	Other Scientists	Semi-Fixed	Indirect
067	Chaplains	Fixed	Overhead

PROFESSIONAL AND TECHNICAL STAFF

071	Medical Laboratory Scientific Officers	Semi-Fixed	Indirect
072	Restorative Maxillo Facial/ Orthodontic Technicians	Semi-Fixed	Indirect
073	Pharmacy Technicians	Semi-Fixed	Indirect
074	Dental Hygienists, Dental Surgery		

PROFESSIONAL AND TECHNICAL STAFF (continued)

Sub-Code	Description	Classification	Typical Analysis
	Assistants, Dental Therapists	Semi-Fixed	Indirect
075	All other Technicians	Semi-Fixed	Indirect
077	District/Unit Work Staff	Fixed	Overhead

OPTICIANS

Sub-Code	Description	Classification	Typical Analysis
090	Opticians	Semi-Fixed	Direct

PHARMACISTS

100	Pharmacists	Semi-Fixed	Indirect

ADMINISTRATIVE AND CLERICAL

102	Other Administrative and Clerical Staff	Semi-Fixed	Overhead
103	NHS staff on protected Local Authority Salary Scale	Semi-Fixed	Overhead

ANCILLARY STAFF

111	Ancillary Staff negotiated by Whitley	Semi-Fixed	Indirect
112	Ancillary Staff not negotiated by Whitley	Semi-Fixed	Indirect
113	Upholsterers	Semi-Fixed	Indirect
114	Orthopaedic Appliance Grades	Semi-Fixed	Indirect

MAINTENANCE STAFF

121	Building Trade Operatives	Fixed	Overhead
122	Maintenance Technicians	Fixed	Overhead
123	Maintenance Craftsmen	Fixed	Overhead
124	Maintenance Assistants	Fixed	Overhead
125	Planner Estimators	Fixed	Overhead

HEALTH CARE ASSISTANTS

Sub-Code	Description	Typical Classification	Analysis
145	Health Care Assistants	Semi-Fixed	Indirect

NON-NHS STAFF (Note 1)

151	Medical	Semi-Fixed	Direct
152	Dental	Semi-Fixed	Direct
153	Nursing	Semi-Fixed	Direct
154	Professions Allied to Medicine	Semi-Fixed	Indirect
155	Professional and Scientific	Semi-Fixed	Indirect
156	Professional and Technical - PTB	Semi-Fixed	Indirect
157	Opticians	Semi-Fixed	Direct
158	Pharmacists	Semi-Fixed	Indirect
159	Administrative and Clerical - Typing and Secretarial Skills	Semi-Fixed	Overhead
160	Administrative and Clerical - Other	Semi-Fixed	Overhead
161	Ancillary Staff	Semi-Fixed	Indirect
162	Maintenance Staff	Semi-Fixed	Overhead
163	Ambulance Staff	N/A	

CHAIRMAN'S AND NON-EXECUTIVE MEMBERS REMUNERATION

180	Remuneration	Fixed	Overhead

SUPPLIES AND SERVICES - CLINICAL

301	Occupational and industrial therapy equipment and materials	Semi-Fixed	Indirect
302	Drugs	Variable	Indirect
303	Medical gases	Variable	Indirect
304	Dressings	Variable	Direct
305	Medical and surgical equipment - Purchases	Semi-Fixed	Direct
306	- Maintenance Contracts	Semi-Fixed	Indirect
307	X-ray film	Variable	Indirect
308	X-ray equipment and chemicals	Semi-Fixed	Indirect
309	X-ray equipment - maintenance contracts	Semi-Fixed	Indirect
310	Patients' appliances	Variable	Direct
311	Artificial limb & wheelchair hardware	Variable	Direct

SUPPLIES AND SERVICES - CLINICAL (continued)

Sub-Code	Description	Classification	Typical Analysis
	Laboratory equipment		
312	- instruments and materials	Semi-Fixed	Indirect
313	- maintenance contracts	Semi-Fixed	Indirect
314	Fluoridation payments to water authorities	N/A	

SUPPLIES AND SERVICES - GENERAL

321	Provisions - purchases	Variable	Indirect
322	Contract catering	Semi-Fixed	Indirect
323	Staff uniforms and clothing including contracts for making up, etc	Semi-Fixed	Indirect
324	Patients' clothing	Variable	Indirect
325	Laundry - equipment and materials	Semi-Fixed	Indirect
326	Laundry - external contracts	Semi-Fixed	Indirect
327	Hardware and crockery	Semi-Fixed	Indirect
328	Bedding and linen - Disposable	Variable	Indirect
329	Bedding and linen - Non Disposable	Semi-Fixed	Indirect

ESTABLISHMENT EXPENSES

331	Printing and Stationery	Semi-Fixed	Overhead
332	Postage	Semi-Fixed	Overhead
333	Telephone - rental	Semi-Fixed	Overhead
334	Telephone - other, including calls	Semi-Fixed	Overhead
335	Advertising	Semi-Fixed	Indirect
336	Travelling and subsistence expenses	Semi-Fixed	Indirect
337	Removal expenses	Semi-Fixed	Indirect
338	Leased and contract hire charges (staff cars)	Semi-Fixed	Indirect

TRANSPORT AND MOVEABLE PLANT

Sub-Code	Description	Classification	Typical Analysis
341	Fuel and Oil	Semi-Fixed	Indirect
342	Maintenance - equipment and materials	Semi-Fixed	Indirect
343	Maintenance - external contracts	Semi-Fixed	Indirect
344	Hire of transport	Semi-Fixed	Indirect
345	Hospital car service	Variable	Indirect
346	Miscellaneous Transport Expenses	Variable	Indirect

PREMISES AND FIXED PLANT

351	Coal	Fixed	Overhead
352	Oil	Fixed	Overhead
353	Electricity	Fixed	Overhead
354	Gas	Fixed	Overhead
355	Other Fuel	Fixed	Overhead
356	Water and Sewerage	Fixed	Overhead
357	Cleaning - equipment and materials	Semi-Fixed	Indirect
358	External general service contracts not identified elsewhere	Semi-Fixed	Indirect
359	Office equipment	Semi-Fixed	Indirect
360	Purchase of computer hardware and software including licence fees	Semi-Fixed	Indirect
361	External contracts for data processing services	Semi-Fixed	Indirect
362	Maintenance of computer hardware and software including licence fees	Semi-Fixed	Indirect
363	Services	Semi-Fixed	Indirect
364	Rates	Fixed	Overhead
365	Rents	Fixed	Overhead
	Engineering maintenance		
366	- equipment and materials	Fixed	Overhead
367	- external contracts	Fixed	Overhead
	Building maintenance		
368	- equipment and materials	Fixed	Overhead
369	- external contracts	Fixed	Overhead
	Gardening and farming		

PREMISES AND FIXED PLANT (continued)

Sub-Code	Description	Classification	Typical Analysis
370	- equipment and materials	Fixed	Overhead
371	- external contracts	Fixed	Overhead

CAPITAL (Note 2)

381	Capital Charges	Fixed	Overhead
382	Adjustment on disposal of fixed assets	Fixed	Overhead
383	Depreciation on donated assets	Fixed	Overhead

EXTERNAL CONTRACT STAFFING AND CONSULTANCY SERVICES

390	External contract staffing and consultancy services	Fixed	Overhead

MISCELLANEOUS EXPENDITURE

391	Students' bursaries	Fixed	Overhead
392	Patients' allowances	Variable	Indirect
393	Auditors Remuneration	Fixed	Overhead
394	Gross redundancy payments	Fixed	Overhead
395	Net Bank Charges	Fixed	Overhead
396	Patients' travelling expenses	Variable	Overhead
397	All other expenditure	Semi-Fixed	Overhead

Note 2: Capital charges for assets, including a buildings or part of a building, must be charged directly to a specialty if they are used by only one specialty or allocated indirectly by appropriate methods if they are shared between specialties.

APPENDIX B

MINIMUM STANDARD METHOD FOR ALLOCATION AND APPORTIONMENTS OF COSTS TO SPECIALTIES

1. Objectives.

2. Underlying Principles.

3. Overall Approach.

4. Cost Allocation Methods by Department.

5. Notes on Specific Costs and Work Measures.

1. Objectives

The objective of the minimum standard on cost allocation is to avoid differences in reported costs for the same patient treatment caused by unnecessary differences in cost allocation and apportionment methods between different providers.

It is recognised that in the early stages of the development of cost allocation and apportionment methods, an un-complicated approach, capable of being followed by the vast majority of providers represents the most rapid route to a reasonable level of consistency in cost allocation between providers. The standard therefore provides a minimum level of sophistication in cost allocation without preventing providers with more advanced methodologies from taking advantage of them.

2. Underlying Principles

The principles which underlie the standard are that:

- costs should be allocated directly to specialty where possible;
- work measures for use in apportionment of material indirect and overhead costs should:
  - be readily available and accurately measurable. Ideally their accurate measurement should already be required for other purposes;
  - relate reasonably closely to the cost of the activity. For example, if diagnostic tests vary significantly in cost then the number of tests requires weighting appropriately before use as a tool for apportionment.

  If no work measure is available which fulfils both these requirements alternative approaches should be sought, including taking advantage of the judgment of experienced clinicians and managers, until adequate data can be produced. Advantages should also be taken of data available from recent tender specifications for support services;
- a two stage apportionment of support services, via patient treatment services, to specialty is recommended where appropriate. In this way patient treatment services which require relatively high levels of support services will channel their costs through to the specialties they serve.

It is possible to conceive and justify more complex multi-stage apportionment methods in which, for example, part of the cost of one support service is apportioned to another, and vice versa. Again, the principles of Activity Based Costing may be applied in more sophisticated methodologies. In accordance with the objectives set out above these more advanced approaches are not addressed in the guidelines for the time being, but no provider is precluded from using them;

- the structure of the (objective) analysis of costs by department (whether patient treatment services, eg. A&E, or support services, eg. catering) used for management and budgetary control by providers will vary according to each individual provider's management structure. Similarly the (subjective) analysis of cost by type (eg. nurse grade A, electricity) within department will vary from provider to provider. It is not the intention of the NHSME to dictate the cost structure used by providers for management purposes.

3. Overall Approach

3.1 Specification of Costs

In order to specify costs in a way which will be readily understood nationally these guidelines refer to:

- departmental analysis of costs in the Format used in Financial Return HFR21/TFR1 This format forms the basis of the recommended methods of allocation of indirect and overhead costs;

- analysis of costs by type in the Format used in Financial Return HFR25/TFR5. This format is used in Appendix A to:

  - recommend which cost types should be treated as direct, indirect and overhead;

  - advise on which cost types should be treated as fixed, semi-fixed and variable.

The use of these two formats is not intended to prescribe their use for management information and budgetary control purposes.

3.2 Definition of Specialties

Specialties are defined on the same basis as in Financial Return HFR22/TFR2 for the purposes of cost allocation and apportionment.

3.3 Two Stage Cost Allocation

Overview

A two stage apportionment method is used where Support Services are generally apportioned first to Patient Treatment Services. Patient Treatment Services, including their apportionment of Support Services, are then apportioned to specialty. Where Support Services, for example catering, are directly attributable to patients they would be apportioned directly to specialty, for example in proportion to patient days.

Separate Sites

If a Provider contains more than one site it is likely that elements of this two stage allocation to specialty will be dealt with separately for each hospital.

Corporate costs (eg Trust HQ's) will be allocated to each site, prior to any site costs being allocated to specialty.

More Complex Methods

At a later stage of development it may be appropriate to move to a three stage allocation approach in which Overheads are first allocated into Support Services which are then allocated to Patient Treatment Services.

It is also possible to apportion elements of Overheads and Support Services to one another, for example employee services could be apportioned to domestic services based on numbers of staff, and domestic services could be apportioned to employee services based on floor area cleaned. Similarly mutual apportionment of Patient Treatment Services may be possible. These approaches require the solving of a set of simultaneous equations. Providers are not precluded from applying this additional sophistication, or from using more complex tracking of costs providing they are realistic. This standard does not however, require these methods or provide guidance for their use.

Overhead Allocation

In the case of some elements of overhead cost (for example Unit Office Support Services) the majority of providers will have little available in the way of work measures for allocation of these costs. Apportionment in proportion to gross expenditure (as indicated on HFR21/TFR1) is a simple and consistent process for cost apportionment, and is acceptable.

Nevertheless Unit Office Support Services is a significant cost, usually greater than 5 percent of total costs and often greater than any single patient treatment service other than wards and theatres. Attempts should be made in the future, therefore, to improve the basis of allocation of these costs.

It is likely that these improved methods of apportionment will require elements of the cost to be allocated in two stages. For example the cost of payroll production may be allocated on the basis of numbers of employees, via Patient Treatment Services. For this reason, and to encourage managers of Patient Treatment Services to be aware of the effect of overhead costs on their own costs, most overheads are recommended to be apportioned via Patient Treatment Services.

3.4 Fixed, Semi-Fixed and Variable Costs

Costs need to be separated into their fixed, semi-fixed and variable components throughout the cost allocation process described in section 3.3, based on the guidance in Appendix A.

4. Cost Allocation Methods by Department

4.1 Stages

Sections 4.2 and 4.3 which follow set out the minimum standard for allocations in:

- the first stage, from Support Services, indicating which departments should be allocated direct to specialty and which via Patient Treatment Services and with which unit of work measurement;
- the second stage, from Patient Treatment Services to Specialty, indicating the recommended unit of work measurement.

Where appropriate reference is made in each section to more detailed notes on allocation set out in Section 5.

These apportionment methods should only be used once all the possibilities for allocating costs DIRECTLY to specialty have been exhausted. Appendix A gives guidance as to which cost types should be allocated directly.

4.2 First Stage Allocation of Support Services

TRF1/HFR21 Department Reference			Allocated to	By Work Measure	Reference to Notes in Section 5
B1	a	Domestic	PTS	Floor area cleaned	1,2
	b	Catering	PTS or S	Weighted Patient Days	1,3,4
	c	Laundry/Linen	PTS or S	Patient Days	1,3,5
	d	Portering/ Transport	PTS or S	Weighted Patient Days	1,3,6
	e	Engineering Maintenance	PTS	Building Volume	1
	f	Building Maintenance	PTS	Building Volume	1
	g	Energy/Water etc	PTS	Heated Volume	1
	h	Site Overheads	PTS	Building Volume	1
	e	Engineering Maintenance	PTS	Building Volume	1
	f	Building Maintenance	PTS	Building Volume	1
	g	Energy/Water etc.	PTS	Heated Volume	1
	h	Site Overheads (exc capital charges, below)	PTS	Building Volume	1
B2	a	General Manager	PTS	Gross Cost PTS	1
	b	Unit Office Support	PTS	Gross Cost of PTS	1

TFR1/HFR21 Reference		Department	Allocated to	By Work Measure	Reference to Notes in Section 5
	c	Employee Services	PTS	Staff Numbers	
	d	Procurement	PTS	Gross Non Pay Costs	1
	e	Medical Records	S	Attendances plus I.P. Episodes	7
B3	-	Training, Education	PTS	Weighted number of persons employed	8
B4	-	Miscellaneous	PTS	Gross Cost of PTS	1
-	-	Purchase of tertiary referrals	S	Budget cost of Referrals	
-	-	Capital Charges Equipment	PTS	Specific Equipment	9
-	-	Capital Charges, Other	PTS	Floor Area	10

PTS = Patient Treatment Services

S = Specialty as in FR22.

4.3 Second Stage Allocation of Patient Treatment Services to Specialties

It is assumed that where possible costs have been allocated directly and these methods of allocation and apportionment apply to residual costs.

TFR1/HFR21 Department Reference			Method of Apportionment	Reference to Notes in Section 5
A1	a	Wards	Direct Allocation or pro-rata Bed Days	11
	b	Out Patient Clinics	Direct Allocation or pro-rata Attendances	11
	c	Day Care Facilities	Direct Allocation or pro-rata Attendances	11
	d	Accident and Emergency Department	Direct Allocation	11
	e	Community Medical Services	To Community	
	f	Community Nursing and Midwifery	To Community	
	g	Community Dental Services	To Community	
		Clinicians	Direct Allocation	11
A2	a	Artificial Limb and Wheelchair	Item Issued, or to Non-Acute	
	b	Audiology	Direct to ENT	
	c	Chiropody	Face to Face Contact	12
	d	Dietetics	Face to Face Contacts	12
	e	ECG	Weighted Requests	13
	f	EEG	Requests	12

TRF1/HFR21 Department Reference			Method of Apportionment	Reference to Notes in Section 5
A2	g	Health Promotion	To Purchaser	
	h	Industrial Therapy	To Community or Occupational Therapy	
	i	Lithotripsy	Attendances	12
	j	Medical Illustration and Photography	Number of Requests	12
	k	Medical Physics	Attendances	12
	l	Miscellaneous Patient Treatment Services	Gross Expenditure of Specialties	
	m	Nuclear Medicine	Weighted Request	14
	n	Occupational Therapy	Face to Face Contact	15
	o	Operating Theatres	Operating Time	16
	p	Optical Services	Direct to Ophthalmology	
	q	Pathology	Weighted Number of Requests	17
	r	Patient Transport Service	Patient Journey	
	s	Pharmacy	Expenditure on Drugs	18
	t	Physiotherapy	First Contact	19
	u	Psychology	To Non-Acute	

TFR1/HFR21 Department Reference		Method of Apportionment	Reference to notes in section 5
v	Radiology	Weighted Request	20
w	Radiotherapy	Exposure	12
x	Speech Therapy	Face to Face Contact	12

5. Detailed Notes on Specific Costs and Work Measures

The notes which follow refer to the numbers shown in the right hand column of the tables in Section 4.

1. Support Services (B1) should be allocated to PTS before Overheads (B2) so that the former will be included in the gross cost of PTS for apportionment of relevant overhead costs.

2. **Domestic.** Advantage should be taken where possible of recent tender specifications to analyse service requirements and costs by department.

3. The choice between apportionment directly to Specialty or via PTS will depend on whether the work measure data is available most accurately by Specialty or by PTS. The former should be used if in doubt.

4. For **catering**, patient days require weighting to take account of the higher cost for an in-patient compared to others. Advantage should be taken of the cost analysis available from recent tender specifications. The FR21 method "1000 occupied bed days plus 40% of day care attendances" should be used if better methods are not available.

5. For **laundry and linen** in-patient and day care should have the same weight unless better information is available.

6. **Portering and Transport** Costs should be apportioned by patient days only as a last resort after grouping staff by theatre, ward and specialty where appropriate in order to weight patient days appropriately for each specialty's use of portering and transport. Advantage should be taken of any service requirement and cost analysis by department available from recent tender specifications.

7. **Medical Records.** In the absence of better information outpatient attendance and inpatient episode should be given equal weight since the work in Medical Records, depends largely on the number of records "pulled".

8. **Training and Education.** It is not acceptable to apportion these costs by staff numbers only. Appropriate weight, determined locally, must be given to those departments whose skill base requires more extensive and frequent training.

9. **Capital Charges for Equipment** of material value must be allocated directly to PTS and shared between specialty based on a realistic measure of use.

10. **Other Capital Charges** are likely to be predominantly buildings and fixtures. Where capital charges are available by building block, the charge for each block should be apportioned to the PTS's occupying block in proportion to their floor area. Corridors and common areas should be shared equally between those occupying block pro-rota to floor area. If support space is redundant and it would be inequitable to share its costs between the outposts of the block its cost should be spread throughout the unit as an overhead in a similar way to Unit Office Support.

11. Refer to Appendix A for treatment of clinicians and nursing staff.

12. If this department is likely to have a material effect on cost apportionment requests should be weighted by reference to sampling and to the judgment of the departmental head if better methods are not available. However, for many providers this department will be of small cost and unweighted requests are an acceptable basis of allocation.

13. **ECG.** Note 12 may apply or weight as Manual of Accounts Section 9.8.29.2.

14. **Nuclear Medicine.** Note 12 may apply, or weight as Manual of Accounts 9.8.37.2.

15. **Occupational Therapy.** Face to face contact should be used as a last resort only after apportionment by the numbers of staff working in or shared by a Specialty.

16. **Operating Theatre.** If computerised systems are not available to assess operating time by specialty approximations should be made based on manual records including theatre sessions.

17. **Pathology.** Where no pathology system is available to calculate costs by specialty an assessment should be made based on manual records and the judgment of the PTS Manager.

18 **Pharmacy.** It is assumed that the variable drugs cost will be identifiable to wards, consultant or specialty directly. Other costs should be apportioned on this basis in the absence of other information.

19. **Physiotherapy.** Allocation by first contact should be used only as a last resort after allocation by the estimated time spent by physiotherapists in each specialty, based on normal local organisational groupings.

20. **Radiology.** Note 12 may apply, or weight in accordance with the Manual of Accounts reference 9.8.46.3.

1993/94 Prices: St Somewhere Trust
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ECR TARIFFS 1993/94

GENERAL SPECIALTIES

	Cost Inc CC (£)	Avg Length of Stay (Days)
INPATIENTS		
GENERAL SURGERY (see attached sheet)		
UROLOGY (see attached sheet)		
E.N.T. (see attached sheet)		
GYNAECOLOGY (see attached sheet)		
GENERAL MEDICINE	1,051	6.9
DERMATOLOGY	1,998	15.2
RHEUMATOLOGY	1,622	9.8
PAEDIATRIC MEDICINE	988	1.9
TRAUMA AND ORTHOPAEDICS - TOTAL HIP	3,123	17
- REVISION HIP	3,495	16
- TOTAL KNEE	3,946	17
- REVISION KNEE	4,952	18
- OTHER	1,418	7
OPHTHALMOLOGY:- (see attached sheet)		
ORAL SURGERY	794	2
SCBU	1,192	8.1
OBSTETRICS	644	3.4
G.P. MATERNITY	517	1.4
G.P. MEDICINE	903	14.3
OVERNIGHT STAY (ALL SPECIALTIES)	230	
ADDITIONAL DAILY RATE FOR STAYS EXCEEDING 28 DAYS (ALL SPECIALTIES)	230	
DAY CASES		
GENERAL SURGERY:- ADULTS	173	
ENDOSCOPIES	187	
UROLOGY	169	
E.N.T.	162	
GYNAECOLOGY	228	
GYNAECOLOGY:- LAP STERILISATION	348	
TRAUMA AND ORTHOPAEDICS	406	
OPHTHALMOLOGY (see attached sheet)		
ORAL SURGERY	495	
PLASTIC SURGERY	354	

NB: HIV/AIDS RELATED PATIENTS WILL BE CHARGED ON THE BASIS OF ACTUAL COSTS INCURRED

These Prices Exclude Patient Transport Costs which May be Added if significant !

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ECR TARIFFS 1993/94

GENERAL SPECIALTIES

OUT PATIENTS	Cost Inc CC (£)	Avg Length of Stay (days)
URODYNAMICS	52	
GYNAECOLOGY	38	
DERMATOLOGY	64	
GENERAL SURGERY	25	
UROLOGY	44	
TRAUMA AND ORTHOPAEDIC	58	
E.N.T.	43	
OPHTHALMOLOGY-(WITHOUT LASER TREATMENT)	62	
OPHTHALMOLOGY-(WITH LASER TREATMENT)	250	
ORAL SURGERY	29	
ORTHODONTICS	43	
PLASTIC SURGERY	36	
GENERAL MEDICINE	65	
HAEMATOLOGY	16	
CARDIOLOGY	48	
G.U. MEDICINE	47	
RHEUMATOLOGY	53	
PAEDIATRICS	59	
ALCOHOL ASSESSMENT	8	
OBSTETRICS	22	
PAEDIATRIC ONCOLOGY	103	

OTHER	(£)
DERMATOLOGY-WARD ATTENDER	19
DAY HOSPITAL	35
M.R.I-(Per Scan)	208
CT SCAN (See Attached Sheet)	
HISTOLOGY	25
CYTOLOGY	5
X-RAY	12
X-RAY:- ULTRASOUND	22
BIOCHEMISTRY	7
HAEMATOLOGY	6
MICROBIOLOGY	5
DIETETICS	9
E.E.G	41
E.M.G	20
EVOKED RESPONSE	10
MEDICAL PHYSICS	94
RADIATION PROTECTION - BADGES	2
RADIATION PROTECTION - ROOMS	743

NB: HIV/AIDS RELATED PATIENTS WILL BE CHARGED ON THE BASIS OF ACTUAL COSTS INCURRED

These Prices Exclude Patient Transport Costs which May be Added if significant !

ECR TARIFFS 1993/94

REGIONAL SPECIALTIES

INPATIENTS

	Cost Inc CC (£)	Avg Length of Stay (days)
CARDIOLOGY :- CATHETERS	712	3.7
:- L & R CATHETER	862	6.4
:- ANGIOPLASTY	2,140	2.9
:- PACEMAKERS	3,929	
CARDIOTHORACIC:- SURGERY	2,131	6.7
:- C.A.B.G.	5,396	10.9
NEUROLOGY	1,808	11.2
NEUROSURGERY	2,469	7.1
RADIOTHERAPY	1,429	7.3
RENAL DIALYSIS:- HOSPITAL	20,676	10.7
RENAL DIALYSIS:- HOME	13,372	n/a
RENAL DIALYSIS:- C.A.P.D.	6,938	n/a
RENAL TRANSPLANT	18,008	16.1
NEONATAL	715	per day
BONE MARROW TRANSPLANT	11,711	
HAEMOPHILIA	16,116	5.3

CT SCAN	Cost Inc CC (£)
BRAIN SCAN	54
BRAIN SCAN WITH IONIC CONTRAST	61
BRAIN SCAN WITH NON-IONIC CONTRAST	79
ABDOMEN SCAN	57
ABDOMAN SCAN WITH NON-IONIC CONTRAST	83
CHEST SCAN	57
CHEST SCAN WITH NON-IONIC CONTRAST	83
ORTHOPAEDIC SCAN	56

These Prices Exclude Patient Transport Costs which May be Added if significant !

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ECR TARIFFS

GENERAL SURGERY PROCEDURES BAND	Cost Inc CC (£)	Avg Length of Stay (days)
MINOR	280	1.01
INTERMEDIATE	693	2.32
MAJOR	1280	4.33
MAJOR PLUS	1599	5.21
COMPLEX	4160	13.65

ENT PROCEDURES	Cost Inc CC (£)	Avg Length of Stay (days)
TONSILLECTOMY	568	1.38
INSERTION OF GROMMET	171	.18
MYRINGOTOMY	239	.41
FRACTURE OF NASAL BONE	174	.15
EUA OF EAR	242	.32
SUBNUCOUS RESECTION. OF NOSE	684	1.78
ADENOIDECTOMY	536	1.42
POLYPECTOMY OF INT'L NOSE	743	1.95
OTHER :- MINOR PROCEDURES	234	.51
INTERMEDIATE PROCEDURES	649	1.81
MAJOR PROCEDURES	1321	3.67

UROLOGY PROCEDURES	Cost Inc CC (£)	Avg Length of Stay (days)
TUR	1810	9.95
CYSTOSCOPY	168	.51
OTHER :- MINOR PROCEDURES	275	1.21
INTERMEDIATE PROCEDURES	756	3.65
MAJOR PROCEDURES	1430	7.35

GYNAECOLOGY PROCEDURES

	Cost Inc CC (£)	Avg Length of Stay (days)
D & C	163	d/c
D & C LAPAROSCOPY	190	d/c
D & C POLYPECTOMY	359	1.34
D & C CAUTERY TO CERVIX	182	d/c
LAPAROSCOPIC STERILISATION	331	d/c
LAPAROSCOPY AND DYE	182	d/c
DIAGONSTIC LAPAROSCOPY	155	d/c
EVACUATION OF RETAINED PRODUCTS OF CONCEPTION	336	1.24
TOTAL ABDOMINAL HYSTERECTOMY	1393	7
TOTAL ABDOMINAL HYSTERECTOMY WITH BILATERAL SALPINGO OOPHERECTOMY	1323	3.38
VAGINAL HYSTERECTOMY PLUS POSTERIOR/ ANTERIOR REPAIR	1383	3.75
OTHER MINOR PROCEDURES :-		
E U A FRACTIONAL CURRETAGE COLPOSCOPY BIOPSY EXCISION OF URETHRAL CYST E U A D & C EXCISION FROM VAGINAL VAULT E U A D & C REMOVAL OF COIL EXCISION OF GARTNERS DUCT. CYST D & C POLY CX BIOPSY & CAUTERY	311	d/c
OTHER INTERMEDIATE PROCEDURES :-		
INSERTION OF SHRODKAI SUTURE MARSUPIALISATION OF BARTHOLIN'S ABSCCESS ANTERIOR REPAIR SUPERIOR SKINNING VULVECTOMY EXTENSIVE DIATHERMY TO WARTS REPAIR OF INCISIONAL HERNIA LASER TO VULVAL WARTS MINI LAPAROTOMY	723	3.66
OTHER MAJOR PROCEDURES :-		
VULVECTOMY STERILISATION REVERSAL ANTERIOR POSTERIOR REPAIR MARSHALL MARCHETTING LEFT SALPINGECTOMY MANCHESTER REPAIR LAPAROTOMY OVARIAN CYSTECTOMY	1421	7.27
INFERTILITY PROCEDURES :-		
IN VITRO FERTILISATION	683	day case,
DIRECT INSEMINATION	162	on going
INTRA UTERINE INSEMINATION	140	treatment,
OVULATION INDUCTION	307	no i/p stay.
OTHER GYNAECOLOGY PROCEDURES :-	748	5.5

These Prices Exclude Patient Transport Costs Which May Be

Added if Significant

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ECR TARIFFS 1993/94

OPHTHALMOLOGY PROCEDURES

PROCEDURE	Day Case Cost Inc CC (£)	In pat Cost Inc CC (£)	Avg Length of Stay (days)
PLASTIC REPAIR OF LID		984	3
ENUCLEATION		1,339	4
EVISERATION		1,360	4
ANTERIOR VITRECTOMY		1,237	3
VITRECTOMY		2,207	5
LASER		2,207	5
PENETRATING GRAFT		1,726	4
LAMELLAR GRAFT		1,622	4
REFRACTIVE KERATOPLASTY		699	2
EXAM UNDER ANAESTHETIC	377	377	1
TARSORRAPHY	391	391	1
REMOVAL INTRA OCULAR LENS		1,125	3
RUPTURED GLOBE		1,787	5
REPAIR CANALICULUS		723	2
REPAIR IRIS PROLAPSE		1,305	4
REPAIR OF CORNEA		1,492	4
REPAIR OF SCLERA		1,492	4
STRABISMUS	441	724	2
DACRYOCYSTORHINOSTOMY		1,413	3
RETINAL DETACHMENT SURGERY		1,466	3
RET.DETACH.SURGERY-REMOVE PLOMB/ENCIRC/GUT		1,033	3
CRYOTHERAPY		713	2
GLAUCOMA (IRIDECTOMY)		1,234	4
GLAUCOMA(CRYOTHERAPY TO CILIARY BODY)		1,213	4
GLAUCOMA(TRABECULECTOMY)		1,297	4
REMOVAL INTRA OCULAR FOREIGN BODY		2,551	6
EXTRACAPS CATARACT WITH INTRA OCULAR LENS	614	1,179	3
EXTRACAPS CATARACT W/OUT INTRA OCULAR LENS	579	1,144	3
INTRACAPS CATARACT WITH INTRA OCULAR LENS	614	1,179	3
INTRACAPS CATARACT W/OUT INTRA OCULAR LENS	579	1,144	3
REMOVAL CORNEAL SUTURES	300		
PROBING	348		
BLEPHAROPLASTY	427		
ENTROPION	362		
ECTROPION	362		
CHALAZION	319		
EXCISION EYEBROW LESION	354		
EXCISION LID LESION	354		
EXCISION CANTHAL LESION	363		
EXCISION CONJUNCT. LESION	363		
BIOPSY LID	354		
BIOPSY LACRIMAL GLAND	359		
OTHER OPHTHALMOLOGY PROC - ELECTIVE	527	1,130	3
OTHER OPHTHALMOLOGY PROC - EMERGENCY		1,311	4

ST. SOMEWHERE TRUST

SCHEDULE

GPFH PRICE LIST FOR 1993/94

CODE	PROCEDURE	REVENUE	CAPITAL CHARGES	TOTAL PRICE
1	OPERATIONS FOR SQUINT	494.59	119.87	614.46
2	CHALAZION OPERATION	231.90	66.21	298.11
3	PTERYGIUM OPERATION	218.56	63.93	282.49
4	ECTROPION,ENTROPION,PTOSIS	612.38	170.33	782.71
4	ECTROPION,ENTROPION,PTOSIS (day case)	220.82	61.42	282.24
5	OPERATIONS FOR GLAUCOMA	1133.86	275.13	1408.98
6	OBST. OF NASOLACRIMAL DUCT	695.28	184.28	879.55
6	OBST. OF NASOLACRIMAL DUCT (day case)	222.92	59.08	282.00
7	EXTRACTION OF CATARACT	838.34	203.20	1041.54
8	CORNEAL GRAFT	1267.25	326.50	1593.75
9	LASER TREAT. RETINOPATHIES	218.56	63.93	282.49
10	INSERTION OF GROMMIT	275.36	11.26	286.62
11	MASTOIDECTOMIES	569.36	46.88	616.24
12	STAPEDECTOMY	1064.18	54.11	1118.29
13	TYMPANOPLASTY	569.36	46.88	616.24
14	LABYRINTHECTOMY	1991.72	164.10	2155.82
15	SEPTOPLASTY/SMR OF SEPTUM	711.18	59.22	770.40
16	POLYPECTOMY	426.50	35.78	462.28
17	ETHMOIDECTOMIES	1708.08	139.42	1847.50
18	TURBINECTOMY	426.50	35.78	462.28
19	LESION OF NASAL MUCOSA	101.45	8.64	110.09
20	DRAINAGE OF MAXILLARY SINUS	101.45	8.64	110.09
21	EXPLORATION OF FRONTAL SINUS	1423.40	115.98	1539.38
22	TONSILLECTOMY	602.02	84.58	686.60
22	TONSILLECTOMY (day case)	141.82	12.34	154.16
23	ADENOIDECTOMY	468.88	58.62	527.50
23	ADENOIDECTOMY (day case)	141.82	12.34	154.16
24	PHARYNGOSCOPY	348.86	15.52	364.38
25	LARYNGOSCOPY	426.50	35.78	462.28
26	LARYNGECTOMY	5976.20	489.82	6466.02
27	BLOCK DISSECTION	2879.92	147.42	3027.35
28	BRONCHOSCOPY	370.60	44.42	415.02
29	LESION OF LUNG OR BRONCHUS	1050.73	124.61	1175.34
30	LOBECTOMY/PNEUMECTOMY	2657.35	241.82	2899.18

CODE	PROCEDURE	REVENUE	CAPITAL CHARGES	TOTAL PRICE
31	VALVULAR/ISCHEMIC HEART			
AND	ANGIOPLASTY			
32	LEFT CATHETER	1929.45	181.55	2111.00
	L & R CATHETER	522.45	181.55	704.00
	CABG	672.45	181.55	854.00
	VALVES	5081.13	238.87	5320.00
	OTHER	6281.13	238.87	6520.00
		5841.63	692.16	6533.79
33	THYROIDECTOMY/ABERRENT THYROID GLAND	1376.81	60.50	1437.31
33	THYROIDECTOMY/ABERRENT THYROID GLAND (day case)	232.92	17.27	250.19
34	SALIVARY GLAND & DUCTS	930.64	67.86	998.50
35	PARATHYROID GLANDS	930.64	67.86	998.50
36	OESOPHAGOSCOPY	177.02	13.57	190.59
37	ENDO/DILATION/EXAM OF OESOPH	177.02	13.57	190.59
38	GASTRECTOMY	2560.05	186.30	2746.35
39	VAGOTOMY	1862.32	135.72	1998.04
40	ENDOSCOPY	177.02	13.57	190.59
41	LAPAROSCOPY	232.92	17.27	250.19
42	LESION OF SMALL INTESTINE	2095.24	151.76	2247.00
43	TOTAL/PARTIAL COLECTOMY	2792.97	203.58	2996.54
44	SIGMOIDOSCOPY/COLONOSCOPY	177.02	13.57	190.59
45	EXTERIORISATION OF BOWEL	1629.40	118.44	1747.85
46	REPAIR OF PROLAPSED RECTUM	1629.40	118.44	1747.85
47	HAEMORRHIODECTOMY	930.64	67.86	998.50
48	ANAL FISSURE/FISTULA/PILONIDAL SINUS	465.84	33.31	499.15
48	ANAL FISSURE/FISTULA/PILONIDAL SINUS (day case)	177.02	13.57	190.59
49	OPERATIONS OF GALL BLADDER	1163.56	85.13	1248.70
50	OPERATIONS ON BILE DUCTS	2560.05	186.30	2746.35
51	MASTECTOMY/EXC./BIOP OF BREAST LESION	1163.56	85.13	1248.70
51	MASTECTOMY/EXC./BIOP OF BREAST LESION (day case)	232.92	17.27	250.19
52	REPAIR OF HERNIA	930.64	67.86	998.50
52	REPAIR OF HERNIA (day case)	177.02	13.57	190.59
53	VARICOSE VEINS STRIP./LIGAT	930.64	67.86	998.50
53	VARICOSE VEINS STRIP./LIGAT (day case)	177.02	13.57	190.59
54	SURGERY ON INGROWING TOENAIL	177.02	13.57	190.59
55	EXCISION/BIOP. OF SKIN	177.02	13.57	190.59
56	LYMPH NODE EXCISION/BIOP.	284.68	20.97	305.65

CODE	PROCEDURE	REVENUE	CAPITAL CHARGES	TOTAL PRICE
57	CYSTOSCOPY	319.88	41.95	361.83
58	DIL. OF URETHRA/URETHROTOMY	319.88	41.95	361.83
59	URETHROPLASTY	2985.51	391.11	3376.63
60	PROSTATECTOMY OPEN OR TUR	1706.01	223.32	1929.32
61	OPERATION ON HYDROCOELE	426.50	55.52	482.02
62	ORCHIDOPEXY	258.80	167.42	426.22
63	MALE STERILSATION	213.25	28.38	241.63
64	CIRCUMCISION	533.13	70.33	603.45
64	CIRCUMCISION (day case)	213.25	28.38	241.63
65	VARICOCELE	319.88	41.95	361.83
66	REM. OF URETERIC/RENAL CALC.	2345.76	307.22	2652.98
67	LITHOTRIPSY	393.38	.00	393.38
68	NEPHRECTOMY	2559.01	333.13	2892.14
69	OOPHORECTOMY/SALPINGOOPHOR	903.73	177.67	1081.40
70	OVARIAN CYSTECTOMY	903.73	177.67	1081.40
71	DIAGNOSTIC LAPOROSCOPY	129.40	24.68	154.08
72	FEMALE STERILISATION	216.36	44.42	260.77
73	PAT. TEST OF FALLOPIAN TUBES	129.40	24.68	154.08
74	HYSTERECTOMY ABDOM./VAGINAL	903.73	177.67	1081.40
75	MYOMECTOMY	903.73	177.67	1081.40
76	D and C	129.40	24.68	154.08
77	EUA	203.93	91.21	295.14
78	HYSTEROSCOPY/ENDOMET. RESECT.	257.76	51.82	309.58
79	COLPOSCOPY	516.56	101.17	617.74
79	COLPOSCOPY (day case)	129.40	24.68	154.08
80	ANTERIOR OR POSTERIOR REPAIR	1033.13	203.58	1236.71
81	VULVECTOMY/VULVAL BIOP.	1548.66	305.98	1854.64
82	MARSUP. OF BARTHOLIN'S CYST	129.40	24.68	154.08

CODE	PROCEDURE	REVENUE	CAPITAL CHARGES	TOTAL PRICE
83	OP. ON INTERVERTEBRAL DISCS	2578.63	243.16	2821.79
84	THER. LUMBER EPIDURAL INJ.	809.60	20.55	830.15
85	ARTHROPLASTY OF HIP	3123.49	333.35	3456.84
85	REVISION ARTHROPLASTY OF HIP	3494.95	309.37	3804.32
85	ARTHROPLASTY OF KNEE	3946.44	339.06	4285.49
85	REVISION ARTHRO. OF KNEE	4952.03	309.37	5261.40
86	REM IMPLANTED BONE FIXATION	483.30	20.55	503.85
87	ARTHROSCOPY	433.02	35.39	468.41
88	INTRA ARTICULAR INJ./ASPIRAT	933.31	98.68	1031.99
88	INTRA ARTICULAR INJ./ASPIRAT (day case)	458.22	48.45	506.67
89	MENISECTOMY	310.91	39.96	350.87
90	OSTEOTOMY-HALLUS VALG/RIGID	466.88	61.65	528.53
91	CORRECTION OF HAMMER TOE	483.30	20.55	503.85
92	DUPUYTREN'S CONTRACTURE	401.21	45.66	446.87
93	CARPEL TUNNEL DECOMPRESSION	261.66	27.23	288.89
94	RELEASE OF TRIGGER FINGER	247.29	34.84	282.13
95	EXCISION OF GANGLION	223.69	20.42	244.11
96	ASPIRATION/EXCISION OF BURSA	266.79	57.59	324.38

CODE	PROCEDURE	REVENUE	CAPITAL CHARGES	TOTAL PRICE
	OUTPATIENTS			
	PAEDIATRICS	25.65	5.14	30.79
	CARDIOLOGY	20.52	4.00	24.52
	DERMATOLOGY	21.55	5.71	27.26
	RHEUMATOLOGY	45.15	11.42	56.57
	GENERAL MEDICINE	50.28	11.42	61.70
	GENERAL SURGERY	16.42	4.57	20.98
	UROLOGY	25.65	4.57	30.22
	ORTHOPAEDICS	47.20	10.27	57.48
	ENT	40.02	10.85	50.86
	OPHTHALMOLOGY	51.31	14.27	65.58
	ORAL SURGERY	41.04	9.13	50.18
	ORTHODONTICS	32.84	9.13	41.97
	PLASTIC SURGERY	21.55	3.42	24.97
	NEUROLOGY	56.44	6.57	63.01
	NEUROSURGERY	33.86	8.56	42.42
	G.U. MEDICINE	25.65	7.99	33.64
	GYNAECOLOGY	27.95	7.00	34.95
	URODYNAMICS	52.17	.00	52.17
	PAEDIATRIC ONCOLOGY	103.43	.00	103.43
	HAEMATOLOGY	14.42	1.75	16.17
	RADIOTHERAPY	41.08	4.53	45.61

CODE	PROCEDURE	REVENUE	CAPITAL CHARGES	TOTAL PRICE
	DIRECT ACCESS			
	HAEMATOLOGY	5.67	.24	5.91
	MICROBIOLOGY	4.18	1.00	5.18
	BIOCHEMISTRY	5.06	2.27	7.33
	HISTOLOGY	23.12	1.94	25.06
	CYTOLOGY	4.77	.41	5.18
	RADIOLOGY	5.18	6.52	11.70
	DIETETICS	8.59	.05	8.64

1993/94 Prices: Thereabouts Unit

THEREABOUTS UNIT

ACUTE HOSPITALS UNIT
PRICE LIST 1993/94

VERSION: 4
DATE: 15-Jun-93

PRICED PROCEDURES	IN PATIENT £	DAY CASE £	OUT PATIENT PROCEDURE £
OPHTHALMOLOGY			
1. Operations for squint	810		
2. Extirpation of lesion of eyelid (chalazion)	333	333	98
3. Extirpation of lesion of conjunctiva (pterygium)	629	465	
4. Correction of ectropion, entropion and ptosis	640	509	
5. Operations for glaucoma	892		98
6. Operations for obstruction of nasolacrimal duct	1,171	290	
7. Extraction of lens (cataract) with or without prosthesis	864	668	129
8. Plastic operations on cornea (corneal graft)	1,270		
9. Destruction of lesion of retina (laser treatment of retinopathy)			129
ENT			
10. Drainage of middle ear with or without insertion of grommet	384	273	
11. Exenteration of mastoid air cells mastoidectomy)	964		
12. Stapedectomy	1,065		
13. Repair of eardrum (tympanoplasty)	865		
14. Labyrinthectomy			
15. Operations on septum of nose (including septoplasty and SMR)	938		
16. Nasal-polypectomy	659		
17. Ethmoidectomy	786		
18. Operations on turbinate of nose (including turbinectomy)	539	339	
19. Cautery of lesion of nasal mucosa	733	273	
20. Drainage of maxillary antrum (sinus)	619	339	84
21. Exploration of frontal sinus	764		
22. Excision of tonsil (tonsillectomy)	646		
23. Adenoidectomy	466		
24. Endoscopic operation/examination of pharynx	366		
25. Endoscopic operation/examination of larynx	446		

THEREABOUTS UNIT

ACUTE HOSPITALS UNIT
PRICE LIST 1993/94

VERSION: 4
DATE: 15-Jun-93

PRICED PROCEDURES	IN PATIENT £	DAY CASE £	OUT PATIENT PROCEDURE £
ENT CONT'D			
26. Excision of larynx (laryngectomy)	4,559		
27. Block dissection of cervical lymph nodes			
THORACIC			
28. Endoscopic operation/examination of lower respiratory tract	629	394	
29. Biopsy/excision of lesions of lung/bronchus	585		
30. Excision of lung (including lobectomy and pneumonectomy)			
CARDIOVASCULAR SYSTEM			
31. Operations for valvular disease of the heart			
32. Operations for coronary (ischaemic heart) artery disease			
GENERAL SURGERY			
33. Thyroidectomy (including partial/total/aberrant thyroid gland)	1,741		
34. Operations on salivary glands and ducts	920		
35. Operations on parathyroid glands			
36. Open operations on varices of oesophagus	742	462	
37. Endoscopic operation/dilation/examination of oesophagus	362	96	
38. Total/partial excision of stomach (gastrectomy)	5,154		
39. Extracranial extirpation of vagus nerve (vagotomy)	2,001		
40. Endoscopic operation/examination of upper gastrointestinal tract, etc.	1,424	200	
41. Endoscopic operation/examination of peritoneum	564		
42. Excision of lesion of small intestine	2,342	926	
43. Total/partial excision of colon/rectum (colectomy)	3,245		
44. Endoscopic operation/examination of lower bowel	465	199	96
45. Exteriorisation of bowel (caecum/colon)	2,716		
46. Repair of prolapsed rectum	2,371		

THEREABOUTS UNIT

ACUTE HOSPITALS UNIT
PRICE LIST 1993/94

VERSION: 4
DATE: 15-Jun-93

PRICED PROCEDURES	IN PATIENT £	DAY CASE £	OUT PATIENT PROCEDURE £
GENERAL SURGERY CONT'D			
47. Excision/destruction of haemorrhoid (haemorrhoidectomy)	845	403	99
48. Anal fissure	652	328	
48. Pilonidal sinus	728		
48. Dilation of anal sphincter	1,603	215	
49. Operations of gall bladder	1,320		
50. Operations of bile duct	2,224	451	
51. Total/partial excision of breast (mastectomy) and biopsy	1,038	409	
52. Repair of inguinal/femoral/incisional hernia	789	514	
53. Operations of varicose veins (Single)	506		99
53. Operations of varicose veins (Bilateral)	730		199
54. Operation for ingrowing toenail (excision/avulsion)	275	230	
55. Excision/biopsy of lesion of skin/subcutaneous tissue	592	252	99
56. Excision or biopsy of lymph node	667	328	
GU			
57. Endoscopic operation/examination of bladder/urethra (cystoscopy)	680	315	99
58. Other operations of urethra (urethrotomy)	388	315	
59. Repair of urethra (urethroplasty)	1,921		
60. Endoscopic/open excision of prostate (prostatectomy)	1,446		
61. Operations on hydrocoele sac	576	386	
62. Placement of testis/testes in scrotum (orchidopexy)		529	
63. Excision of vas deferens (male sterilisation)		386	152
64. Operations on prepuce (circumcision)	678	386	
65. Operations on varicocele	537	494	
66. Removal of ureteric or renal calculus	1,441		
67. Extracorporeal fragmentation (lithotripsy) of calculus of kidney/ureter		452	
68. Total/partial excision of kidney (nephrectomy)	2,616		

ACUTE HOSPITALS UNIT
PRICE LIST 1993/94

VERSION: 4
DATE: 15-Jun-93

PRICED PROCEDURES	IN PATIENT £	DAY CASE £	OUT PATIENT PROCEDURE £
GYNAECOLOGY			
69. Oophorectomy/salpingoophorectomy	1,257		
70. Partial/wedge excision of ovary (ovarian cystectomy)	1,351		
71. Diagnostic endoscopic (laparoscopy) examination/biopsy of fallopian tube	457		
72. Occlusion of fallopian tubes (female sterilisation)	468		
73. Patency tests of fallopian tubes	416	250	
74. Abdominal/vaginal excision of uterus (hysterectomy)	1,387		
75. Myomectomy	1,348		
76. D & C (including polypectomy)	347	250	
77. EUA	322	212	
78. Endoscopic operation/examination of uterus (hysteroscopy)	468	289	
79. Colposcopy, destruction/biopsy of lesion of cervix uteri	510	327	61
80. Repair of prolapse/vault of vagina (including amputation of cervix, etc.)	1,220		
81. Excision of vulva (vulvectomy), extirpation/biopsy of lesion of vulva	3,522	189	
82. Marsupialisation of Bartholin gland (remove cyst/abscess)	334	250	
ORTHOPAEDICS			
83. Operations on intervertebral discs	1,715		
84. Therapeutic lumbar epidural injection	413	331	
85. Prosthetic replacement of hip – Single	3,530		
85. Prosthetic replacement of hip – Bilateral	4,794		
85. Prosthetic replacement of knee – Single	4,357		
85. Prosthetic replacement of knee – Bilateral	6,449		
85. Prosthetic replacement of head of femur	3,225		
86. Removal of internal fixation from bone		404	
87. Endoscopic operation/examination of joint (arthroscopy)	507	427	
88. Puncture of joint intra-articular aspiration/injection)	935	223	101
89. Open operations on semilunar cartilage (meniscectomy not included in W82)	696		

ACUTE HOSPITALS UNIT
PRICE LIST 1993/94

VERSION: 4
DATE: 15-Jun-93

PRICED PROCEDURES	IN PATIENT £	DAY CASE £	OUT PATIENT PROCEDURE £
ORTHOPAEDICS CONT'D			
90. Osteotomy of Hallux valgus/rigidus	1,048		
91. Correction of hammer toe	453	404	
92. Palmar fasciectomy (Dupuytren's contracture)	963		
93. Carpal tunnel release (decompression)	457	295	
94. Release of constriction of tendon (trigger finger)	402	354	
95. Excision/re-excision of ganglion	344	295	
96. Operations on bursa (aspiration/excison/exploration)		368	101

THEREABOUTS UNIT

ACUTE HOSPITALS UNIT

PRICE LIST 1993/94

VERSION: 4
DATE: 15–Jun–93

PRICE PER F.C.E. PER SPECIALTY (excluding 96 procedures)	IN PATIENT £	DAY CASE £	OUT PATIENT TREATMENT £
General Surgery and Urology	893	265	99
Oral Surgery	830	385	
Oral IVs			230
Plastic Surgery	1,508	375	
Trauma & Orthopaedics excluding Goretex	1,330	269	101
Trauma & Orthopaedics Goretex	2,990		
E.N.T.	1,046	279	84
Ophthalmology	1,069	388	98
Age Care	1,955		212
Medicine and Cardiology	776	191	
I.T.U *(1)	3,830		
C.C.U *(1)	462		
Pain Clinic			108
Dermatology	2,823		61
Clinical Haematology	1,352	226	
Obstetric – excluding caesareans	641		
Obstetric – caesareans	2,041		
GP Maternity	527		
Gynaecology	346	233	61
Paediatrics	496	227	
S.C.B.U.	3,482		
Overnight Observation Rate – all Specialties	200		
*(1) I.T.U. and C.C.U. charged in addition to stays in other Specialties			
(2) Pacemakers and MRIs not included in above prices, these are charged separately			

THEREABOUTS UNIT

ACUTE HOSPITALS UNIT
PRICE LIST 1993/94

VERSION: 4
DATE: 15–Jun–93

OUT PATIENTS – HEREFORD ACUTE HOSPITALS	FIRST REFERRAL £	FOLLOW UP £
General Surgery and Urology	66	33
Oral Surgery	49	49
Orthodontics	37	37
Plastic Surgery	28	15
Trauma & Orthopaedics	67	34
E.N.T.	57	28
Ophthalmology	65	32
Age Care	142	71
Medicine and Cardiology	98	49
Pain Clinic	72	28
Gastro Enterology	110	56
Dermatology	41	20
Clinical Haematology	49	49
Anti – Coag.	26	26
Neurology	54	27
Thoracic	106	54
G.U.	53	53
Oncology	40	40
Diabetic	57	57
Obstetrics	42	42
Gynaecology	41	20
Paediatrics	77	39
CT Scan	90	90
* MRIs not included in the above prices, these are charged separately		

THEREABOUTS UNIT

ACUTE HOSPITALS UNIT
PRICE LIST 1993/94

VERSION: 4
DATE: 15-Jun-93

OUT PATIENTS – COMMUNITY HOSPITALS	FIRST REFERRAL £	FOLLOW UP £
General Surgery and Urology	41	20
Ophthalmology	61	30
Age Care	81	81
Dermatology	56	36
Obstetrics	42	42
Paediatrics	46	46

THEREABOUTS UNIT

ACUTE HOSPITALS UNIT
PRICE LIST 1993/94

VERSION: 4
DATE: 15-Jun-93

DAY CARE	PER ATTENDANCE £
Age Care	39

Appendix Q

1994/95 Costing for Contracting: Case Study Sites

Cost Analysis by Specialty - Case Study Sites

St Somewhere Contract Pricing Analysis

In patients	DIRECT %	INDIRECT %	OVERHEAD %
General Surgery	40	58	2
Urology	43	55	2
ENT	44	54	2
Gynaecology	37	61	2
General Medicine	46	52	2
Dermatology	62	36	2
Rheumatology	72	26	2
Paediatrics	46	52	2
Trauma & Orthopaedics	67	31	2
Ophthalmology	51	47	2
Oral surgery	35	63	2
SCBU	93	5	2
Obstetrics	58	40	2
Neurology	83	15	2
Neurosurgery	70	28	2
Radiotherapy	54	44	2
Renal dialysis- hospital	71	27	2
Renal dialysis- home	29	69	2
Renal dialysis- capd	65	33	2
Renal transplant	40	58	2
Cardiothoracic surgery	47	51	2
Cardiology catheters	27	71	2
GP Maternity	58	40	2
Neonatal	25	73	2
BMT	1	97	2
Haemophilia	58	40	2
TOTAL INPATIENTS	**51**	**47**	**2**
DAY CASES	**50**	**48**	**2**
OUT PATIENTS	**63**	**35**	**2**
OTHER	**72**	**26**	**2**
GRAND TOTAL	**55**	**43**	**2**

Thereabouts Contract Pricing Analysis

In patients	DIRECT %	INDIRECT %	OVERHEAD %
General Surgery	48	24	28
Urology	51	21	28
ENT	58	9	33
Gynaecology	48	18	34
General Medicine	44	26	30
Dermatology	54	19	27
Rheumatology	54	20	26
Paediatrics	60	14	26
Trauma & Orthopaedics	52	20	28
Ophthalmology	54	11	35
Oral surgery	55	17	28
SCBU	63	11	26
Obstetrics	63	12	25

Cost Classification by Specialty - Case Study Sites

Appendix Q (ii)

St Somewhere Contract Pricing Analysis

	FIXED %	SEMI-FIXED %	VARIABLE %
General Surgery	17	66	17
Urology	14	68	18
ENT	27	56	17
Gynaecology	13	72	15
General Medicine	17	63	20
Dermatology			
Rheumatology	24	54	22
Paediatrics	13	78	9
Trauma & Orthopaedics	16	69	15
Ophthalmology	22	60	18
Oral surgery	59	5	36
SCBU			
Obstetrics	20	73	7
Regional specialties	17	71	12

Thereabouts Contract Pricing Analysis

	FIXED %	SEMI-FIXED %	VARIABLE %
General Surgery	23	68	9
Urology	24	67	9
ENT	29	68	3
Gynaecology	31	61	8
General Medicine	26	65	9
Dermatology	31	60	9
Rheumatology	25	66	9
Paediatrics	24	69	7
Trauma & Orthopaedics	20	72	8
Ophthalmology	29	69	2
Oral surgery	26	67	7
SCBU	25	70	5
Obstetrics	19	75	6

INFORMATION REQUIRED FOR CONTRACTING & PRICING 1993/94

This information must be returned to Winston Weir by Monday 4th October 1993.

DIRECTORATE:
DEPARTMENT:
COST CENTRE(S):
SUBMITTED BY:
DATE:

SPECIALTY/OTHER SERVICES	PATIENT TREATMENT CLASSIFICATION			TYPE	TOTAL
	INPATIENTS	DAY CASES	OUTPATIENTS	ELECTIVE(1) EMERGENCY(2)	
CARDIOTHORACIC DIRECTORATE					
Cardiac Surgery					
Thoracic Surgery					
Cardiology					
Renal Transplant					
Renal Dialysis					
WOMEN/CHILDREN DIRECTORATE					
Paediatric Medicine					
Obstetrics					
G.P.Maternity					
Gynaecology					
S.C.B.U					
Neo-natology					
MEDICAL DIRECTORATE					
General Medicine					
Rheumatology					
Dermatology					
Haemophilia					
Bone Marrow transplantation					
G.U.Medicine					
Alcohol Assessment					
Day Hospital					
Emergency Admissions					
SURGICAL DIRECTORATE					
General Surgery: Adults					
General Surgery: Children					
Urology					
Nephrology (outpatients)					
SPECIALIST SURGERY DIRECTORATE					
ENT					
Opthalmology					
Maxillo-Facial					
Neurosurgery					
Neurology					
Plastic Surgery					
Oral surgery					
Orthodontics					
Neurophysiology					
C2 I.T.U					
THEATRES DIRECTORATE					
WALSGRAVE - 1st Floor					
WALSGRAVE - 2nd Floor					
WALSGRAVE - 3rd Floor					
WALSGRAVE - Gynaecology					
WALSGRAVE - ENT					
COV & WARWICK - ORTHO					
COV & WARWICK - OPTHALMIC					
COV & WARWICK - D.S.U					
ORTHOPAEDICS DIRECTORATE					
Orthopaedics					
Accident & Emergency					
THERAPY DIRECTORATE					
Radiotherapy treatments					
Radiotherapy - Chemotherapy					
Radiotherapy day centre					
DIRECT ACCESS & OTHER SERVICES					
X-Ray					
Ultrasound					
C/T Scan					
Biochemistry					
Haematology					
Histology					
Microbiology					
M.R.I					
P.U.V.A					
Medical Physics					
Neurophysiology					
Renal Dialysis					
Neo Natal Intensive Care					
Community Midwifery					
Dietetics					
Accident & Emergency					
Breast Screening Unit					
PROVIDED TO COMMUNITY UNIT/HOSP					
OTHER(List below)					
TOTAL					

1994/95 Prices: St Somewhere Trust
GPFH
ECR

ST SOMEWHERE TRUST

GP FUNDHOLDERS PRICE LIST FOR 1994/95

CODE	PROCEDURE	INPATIENT TOTAL	DAY CASE TOTAL
1	OPERATIONS FOR SQUINT	800.85	488.24
2	CHALAZION OPERATION		352.93
3	PTERYGIUM OPERATION		403.88
4	ECTROPION, ENTROPION, PTOSIS	1088.75	
4	ECTROPION, ENTROPION, PTOSIS (day case)		400.13
5	OPERATION FOR GLAUCOMA (iridectomy)	1366.03	
5	OPERATION FOR GLAUCOMA (cryo to c. body)	1342.70	
5	OPERATION FOR GLAUCOMA (trabeculectomy)	1435.50	
6	OBST. OF NASOLACRIMAL DUCT	1182.08	
6	OBST. OF NASOLACRIMAL DUCT (day case)		391.95
7	EXTRACTION OF CATARACT (with IOL)	1304.30	679.07
7	EXTRACTION OF CATARACT (w/out IOL)	1266.25	641.02
8	PENETRATING GRAFT	1909.57	
8	LAMELLAR GRAFT	1794.83	
9	LASER TREAT. RETINOPATHIES		403.88
10	INSERTION OF GROMMIT		166.00
11	MASTOIDECTOMIES	630.00	
12	STAPEDECTOMY	630.00	
13	TYMPANOPLASTY	630.00	
14	LABYRINTHECTOMY	2205.00	
15	SEPTOPLASTY/SMR OF SEPTUM	787.00	
16	POLYPECTOMY	472.00	
17	ETHMOIDECTOMIES	1890.00	
18	TURBINECTOMY	472.00	
19	LESION OF NASAL MUCOSA		166.00
20	DRAINAGE OF MAXILLARY SINUS		166.00
21	EXPLORATION OF FRONTAL SINUS	1575.00	
22	TONSILLECTOMY (day case)		157.00
23	ADENOIDECTOMY		157.00
23	ADENOIDECTOMY (day case)		157.00
24	PHARYNGOSCOPY	472.00	
25	LARYNGOSCOPY	6614.00	
26	LARYNGECTOMY	1732.00	
27	BLOCK DISSECTION		
28	BRONCHOSCOPY	421.24	
29	LESION OF LUNG OR BRONCHUS	1192.97	
30	LOCECTOMY/PNEUMECTOMY	2942.66	
31	VALVULAR/ISCHEMIC HEART AND ANGIOPLASTY	2059.79	
32	CABG	4664.38	
	VALVES	5864.38	
	OTHER	5876.78	

CODE	PROCEDURE	INPATIENT TOTAL	DAY CASE TOTAL
33	THYROIDECTOMY/ABERRENT THYROID GLAND(partial)	829.00	
33	THYROIDECTOMY/ABERRENT THYROID GLAND(total)	2337.00	
34	SALIVARY GLAND AND DUCTS		207.00
35	PARATHYROID GLANDS	829.00	
36	OESOPHAGOSCOPY	829.00	
37	ENDO/DILATION/EXAM OF OESOPH		175.00
38	GASTRECTOMY		175.00
39	VAGOTOMY	2281.00	
40	ENDOSCOPY	1659.00	
41	LAPAROSCOPY		175.00
42	LESION OF SMALL INTESTINE		207.00
43	TOTAL/PARTIAL COLLECTOMY	1866.00	
44	SIGMOIDOSCOPY/COLONOSCOPY	2488.00	
45	EXTERIORISATION OF BOWEL		175.00
46	REPAIR OF PROLAPSED RECTUM	1451.00	
47	HAEMORRHIODECTOMY	1451.00	
48	ANAL FISSURE/FISTULA/PILONIDAL SINUS	829.00	
48	ANAL FISSURE/FISTULA/PILONIDAL SINUS (day case)	415.00	
49	OPERATIONS OF GALL BLADDER		175.00
50	OPERATIONS ON BILE DUCTS	1037.00	
51	MASTECTOMY/EXC./BIOP OF BREAST LESION	2281.00	
51	MASTECTOMY/EXC./BIOP OF BREAST LESION (d/case)	1037.00	
52	REPAIR OF HERNIA		207.00
52	REPAIR OF HERNIA (day case)	829.00	
53	VARICOSE VEINS STRIP./LIGAT		175.00
53	VARICOSE VEINS STRIP./LIGAT (day case)	829.00	
54	SURGERY ON INGROWING TOENAIL		175.00
55	EXCISION/BIOP. OF SKIN		175.00
56	LYMPH NODE EXCISION/BIOP.		175.00
			415.00
57	CYSTOSCOPY		359.00
58	DIL. OF URETHRA/URETHROTOMY		359.00
59	URETHROPLASTY	3348.00	
60	PROSTATECTOMY OPEN	1913.00	
60	PROSTATECTOMY TUR	1196.00	
61	OPERATION ON HYDROCOELE	478.00	
62	ORCHIDOPEXY	478.00	
63	MALE STERILISATION		239.00
64	CIRCUMCISION	598.00	
64	CIRCUMCISION (day case)		239.00
65	VARICOCELE		359.00
66	REM. OF URETERIC/RENAL CALC.	2631.00	
67	LITHOTRIPSY		399.28
68	NEPHRECTOMY	2870.00	

CODE	PROCEDURE	INPATIENT TOTAL	DAY CASE TOTAL
69	OOPHORECTOMY/SALPINGOOPHOR	876.00	
70	OVARIAN CYSTECTOMY	876.00	
71	DIAGNOSTIC LAPOROSCOPY		125.00
72	FEMALE STERILISATION		225.00
73	PAT. TEST OF FALLOPIAN TUBES		125.00
74	HYSTERECTOMY ABDOM./VAGINAL (non-malignant)	876.00	
74	HYSTERECTOMY ABDOM./VAGINAL	2229.00	
75	MYOMECTOMY	876.00	
76	D AND C		125.00
77	EUA		225.00
78	HYSTERECTOMY/ENDOMET. RESECT.		250.00
79	COLPOSCOPY	500.00	
79	COLPOSCOPY (day case)		125 00
80	ANTERIOR OR POSTERIOR	1001.00	
81	VULVECTOMY/VULVAL BIOP. (simple)	876.00	
81	VULVECTOMY/VULVAL BIOP.	1501.00	
82	MARSUP. OF BARTHOLIN'S CYST		125.00
83	OP. ON INTERVERTEBRAL DISCS	2872.00	
84	THER. LUMBER EPIDURAL INJ.	300.13	200 13
85	ARTHROPLASTY OF HIP	4627.00	
85	REVISION ARTHROPLASTY OF HIP	6041.00	
85	ARTHROPLASTY OF KNEE	5927.00	
85	REVISION ARTHRO. OF KNEE	7541.00	
86	REM IMPLANTED BONE FIXATION	804.60	504.60
87	ARTHROSCOPY	740.50	440.50
88	INTRA. ARTICULAR INJ./ASPIRAT	1047.47	
88	INTRA. ARTICULAR INJ./ASPIRAT (day case)		184.10
89	MENISECTOMY	1380.25	
90	OSTEOTOMY- UPPER TIBIAL	1940.50	
90	OSTEOTOMY- HALLUS VALG/RIGID	580.25	280.25
91	CORRECTION OF HAMMER TOE		580.25
92	DUPUYTREN'S CONTRACTURE	740.50	248.20
93	CARPEL TUNNEL DECOMPRESSION	580.25	280.25
94	RELEASE OF TRIGGER FINGER	330.25	280.25
95	EXCISION OF GANGLION	348.20	248.20
96	ASPIRATION/EXCISION OF BURSA	380.25	248.20
	ITU TREATMENT (PER TISS UNIT)	22.27	

CODE	PROCEDURE	OUTPATIENT TOTAL
	OUTPATIENTS	
	CARDIOLOGY	
	CARDIOTHORACIC	104.75
	DERMATOLOGY	62.69
	ENT	64.03
	GENERAL MEDICINE	42.50
	GENERAL SURGERY	65.00
	G.U. MEDICINE	24.99
	GYNAECOLOGY	47.00
	HAEMATOLOGY	34.19
	NEUROLOGY	44.48
	NEUROSURGERY	69.17
	OPHTHALMOLOGY	35.83
	ORAL SURGERY	62.00
	ORTHODONTICS	29.02
	ORTHOPAEDICS	43.02
	PAEDIATRICS	58.08
	PAEDIATRIC ONCOLOGY	47.86
	PLASTIC SURGERY	93.39
	RADIOTHERAPY	36.02
	RHEUMATOLOGY	47.69
	URODYNAMICS	53.02
	UROLOGY	53.46
		43.16
	DIRECT ACCESS	
	BIOCHEMISTRY	4.48
	CYTOLOGY	4.97
	DIETETICS	11.38
	ENDOSCOPY	150.00
	HAEMATOLOGY	4.38
	HISTOLOGY	24.99
	MICROBIOLOGY	4.32
	MRI	147.00
	RADIOLOGY	10.48

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ECR TARIFFS 1994/95

GENERAL SPECIALTIES

		COST INCLUDING CAPITAL CHARGE (£)	AVERAGE LE OF STA (DAYS)
INPATIENTS			
GENERAL SURGERY	(see attached sheet)		
UROLOGY	(see attached sheet)		
E.N.T	(see attached sheet)		
GYNAECOLOGY	(see attached sheet)		
GENERAL MEDICINE		867.50	
DERMATOLOGY		1995.01	
RHEUMATOLOGY		1669.78	
PAEDIATRIC MEDICINE		943.88	
TRAUMA & ORTHOPAED-TOTAL HIP		4327.00	
-REVISION HIP		6041.00	
-TOTAL KNEE		5927.00	
-REVISION KNEE		7541.00	
-OTHER			
OPTHALMOLOGY	(see attached sheet)		
ORAL SURGERY		767.67	
S.C.B.U.		1192.66	
OBSTETRICS		649.29	
G.P. MATERNITY		513.44	
G.P. MEDICINE			
OVERNIGHT STAY (ALL SPECIALTIES)		200.00	
ADDITIONAL DAILY RATE FOR STAYS EXCEEDING 28 DAYS (ALL SPECIALTIES)		200.00	
DAY CASES			
GENERAL SURGERY:- ADULTS		175.29	
ENDOSCOPIES		186.99	
UROLOGY		174.55	
E.N.T.		165.78	
GYNAECOLOGY		227.81	
GYNAECOLOGY:- LAP STERILISATION		347.32	
TRAUMA AND ORTHOPAEDICS		464.19	
OPTHALMOLGY(see attached sheet)			
ORAL SURGERY		510.02	
PLASTIC SURGERY		353.84	

NB: HIV/AIDS RELATED PATIENTS WILL BE CHARGED ON THE BASIS OF ACTUAL COSTS INCURRED

THESE PRICES EXCLUDE PATIENT TRANSPORT COSTS WHICH MAY BE

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ECR TARIFFS 1994/95

GENERAL SPECIALTIES

OUTPATIENTS	COST INCLUDING CAPITAL CHARGE (£)	AVERAGE LENGTH OF STAY (DAYS)
URODYNAMICS		
GYNAECOLOGY	53.46	
DERMATOLOGY	34.19	
GENERAL SURGERY	64.03	
UROLOGY	24.99	
TRAUMA & ORTHOPAEDICS	43.16	
E.N.T.	58.08	
OPTHALMOLOGY-(WITHOUT LASER TREATMENT)	42.50	
OPTHALMOLOGY-(WITH LASER TREATMENT)	62.00	
ORAL SURGERY	250.00	
ORTHODONTICS	29.02	
PLASTIC SURGERY	43.02	
GENERAL MEDICINE	36.02	
HAEMATOLOGY	65.00	
CARDIOLOGY	44.48	
G.U. MEDICINE	104.75	
RHEUMATOLOGY	47.00	
PAEDIATRICS	53.02	
ALCOHOL ASSESSMENT	47.86	
OBSTETRICS	105.36	
PAEDIATRIC ONCOLOGY	62.69	
RADIOTHERAPY	93.39	
	47.69	
OTHER		
DERMATOLOGY-WARD ATTENDER	20.00	
DAY HOSPITAL	35.02	
M.R.I.-(per scan)	147.00	
CT SCAN (see attached sheet)		
HISTOLOGY	24.99	
CYTOLOGY	4.97	
X-RAY	10.48	
X-RAY:- ULTRASOUND	27.44	
BIOCHEMISTRY	4.48	
HAEMATOLOGY	4.38	
MICROBIOLOGY	4.32	
DIETETICS	11.38	
E.E.G.	63.47	
E.M.G.	35.16	
EVOKED RESPONSE	14.81	
MEDICAL PHYSICS	95.00	
RADIATION PROTECTION - BADGES	2.00	
RADIATION PROTECTION - ROOMS	591.32	

NB: HIV/AIDS RELATED PATIENTS WILL BE CHARGED ON THE BASIS OF ACTUAL COSTS INCURRED

ESE PRICES EXCLUDE PATIENT TRANSPORT COSTS WHICH MAY BE DED IF SIGNIFICANT

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ECR TARIFFS 1994/95

REGIONAL SPECIALTIES

INPATIENTS		COST INCLUDING CAPITAL CHARGE (£)	AVERAGE LENGTH OF STAY (DAYS)
CARDIOLORY	:-CATHETERS	692.02	3.7
	:-L & R CATHETER		6.4
	:-ANGIOPLASTY	2059.79	2.9
	:-PACEMAKERS	3532.84	
CARDIOTHORACIC	:-SURGERY	1909.08	6.7
	:-C.A.B.G.	4664.38	10.9
NEUROLOGY		1803.80	11.2
NEUROSURGERY		2316.85	7.1
RADIOTHERAPY		855.25	7.3
RENAL DIALYSIS	:-HOSPITAL	18439.60	10.7
RENAL DIALYSIS	:-HOME	12283.79	N/A
RENAL DIALYSIS	:-C.A.P.D.	5655.88	N/A
RENAL TRANSPLANT		15933.05	16.1
NEONATAL		640.42	PER DAY
BONE MARROW TRANSPLANT		9662.02	
HAEMOPHILIA		48568.87	5.3

CT SCAN	COST INCLUDING CAPITAL CHARGE (£)	AVERAGE LENGTH OF STAY (DAYS)
BRAIN SCAN	71.39	
BRAIN SCAN WITH IONIC CONTRAST	75.30	
BRAIN SCAN WITH NON-IONIC CONTRAST	89.59	
ABDOMEN SCAN	71.39	
ADBOMEN SCAN WITH NON-IONIC CONTRAST	89.59	
CHEST SCAN	71.39	
CHEST SCAN WITH NON-IONIC CONTRAST	89.59	
ORTHOPAEDIC SCAN	71.39	

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ECR TARIFFS 1994/95

GENERAL SURGERY PROCEDURES

BAND		COST INCLUDING CAPITAL CHARGE (£)	AVERAGE LENGTH OF STAY (DAYS)
MINOR	280	221.20	
INTERMEDIATE	693	547.47	
MAJOR	1280	1011.20	
MAJOR PLUS	1599	1263.21	
COMPLEX	4160	3286.40	

ENT PROCEDURES

		COST INCLUDING CAPITAL CHARGE (£)	AVERAGE LENGTH OF STAY (DAYS)
TONSILECTOMY	568	536.19	1.38
INSERTION OF GROMMET	171	161.42	.18
MYRINGOTOMY	239	225.62	.41
FRACTURE OF NASAL BONE	174	164.26	.15
EUA OF EAR	242	228.45	.32
SUBMUCOUS RESECTION OF NOSE	684	645.70	1.78
ADENOIDECTOMY	536	505.98	1.42
POLYPECTOMY OF INT'L NOSE	743	701.39	1.95
OTHER :-MINOR PROCEDURES	234	220.90	.51
:-INTERMEDIATE PROCEDURES	649	612.66	1.81
:-MAJOR PROCEDURES	1321	1247.02	3.67

UROLOGY PROCEDURES

		COST INCLUDING CAPITAL CHARGE (£)	AVERAGE LENGTH OF STAY (DAYS)
TUR	1810	1520.40	9.95
CYSTOSCOPY	168	141.12	.51
OTHER :-MINOR PROCEDURES	275	231.00	1.21
:-INTERMEDIATE PROCEDURES	756	635.04	3.65
:-MAJOR PROCEDURES	1430	1201.20	7.35

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ECR TARIFFS 1994/95

GYNAECOLOGY PROCEDURES		COST INCLUDING CAPITAL CHARGE (£)	AVERAGE LENGTH OF STAY (DAYS)	
D & C	163	149.96	D/C	
D & C LAPAROSCOPY	190	174.80	D/C	
D & C POLYPECTOMY	359	330.28		1.34
D & C CAUTERY TO CERVIX	182	167.44	D/C	
LAPAROSCOPIC STERILISATION	331	304.52	D/C	
LAPAROSCOPY AND DYE	182	167.44	D/C	
DIAGNOSTIC LAPAROSCOPY	155	142.60	D/C	
EVACUATION OF RETAINED PRODUCTS OF CONCEPTION	336	309.12		1.24
TOTAL ABDOMINAL HYSTERECTOMY	1393	1281.56		7
TOTAL ABDOMINAL HYSTERECTOMY WITH BILATERAL SALPINGO OOPHERECTOMY	1323	1217.16		3.38
VAGINAL HYSTERECTOMY PLUS POSTERIOR/ ANTERIOR REPAIR	1383	1272.36		3.75
OTHER MINOR PROCEDURES				
:-EUA FRACTIONAL CURRETAGE :-COLPOSCOPY :-EXCISION OF URETHRAL CYST :-EUA D&C :-EXCISION FROM VAGINAL VAULT :-EUA D&C REMOVAL OF COIL :-EXCISION OF GARTNERS DUCT. CYST :-D&C POLY CX BIOPSY & CAUTERY	511	286.12	D/C	
OTHER INTERMEDIATE PROCEDURES				
:-INSERTION OF SHRODKAI SUTURE :-MARSUPIALISATION OF BARTHOLIN'S ABSCCESS :-ANTERIOR REPAIR :-SUPERIOR SKINNING VULVECTOMY :-EXTENSIVE DIATHERMY TO WARTS :-REPAIR TO INCISIONAL HERNIA :-LASER TO VULVAL WARTS :-MINI LAPAROTOMY	723	665.16	D/C	
OTHER MAJOR PROCEDURES				
:-VULVECTOMY :-STERILISATION REVERSAL :-ANTERIOR POSTERIOR REPAIR :-MARSHALL MARCHETTING :-LEFT SALPINGECTOMY	1421	1307.32	D/C	

INFERTILITY PROCEDURES				
:-IN VITRO FERTILISATION	683	628.36	DAY CASE	
:-DIRECT INSEMINATION	162	149.04	ON GOING	
:-INTRA UTERINE INSEMINATION	140	128.80	TREATMENT	
:-OVULATION INDUCTION	307	282.44	NO I/P STAY	
OTHER GYNAECOLOGY PROCEDURES	748	688.16		5.5

ESE PRICES EXCLUDE PATIENT TRANSPORT COSTS WHICH MAY BE
DED IF SIGNIFICANT

ST. SOMEWHERE TRUST

ECR TARIFFS 1994/95

OPTHALMOLOGY PROCEDURES	DAY CASE COST INCLUDING CAPITAL CHARGE (£)	INPATIENT COST INCLUDING CAPITAL CHARGE (£)	AVERAGE LENGTH OF STAY (DAYS)
PLASTIC REPAIR OF LID		984.00	3
ENUCLEATION		1339.00	4
EVISERATION		1360.00	4
ANTERIOR VITRECTOMY		1237.00	3
VITRECTOMY		2207.00	5
LASER		2207.00	5
PENETRATING GRAFT		1726.00	4
LAMELLAR GRAFT		1622.00	4
REFLECTIVE KERATOPLASTY		699.00	2
EXAM UNDER ANAESTHETIC	377.00	377.00	1
TARSORRAPHY	391.00	391.00	1
REMOVAL INTRA OCULAR LENS		1125.00	3
RUPRURED GLOBE		1787.00	5
REPAIR CANALICULUS		723.00	2
REPAIR IRIS PROLAPSE		1305.00	4
REPAIR OF CORNEA		1492.00	4
REPAIR OF SCLERA		1492.00	4
STRABISMUS	441.00	724.00	2
DACRYOCYSTORHINOSTOMY		1413.00	3
RETINAL DETACHMENT SURGERY		1466.00	3
RET. DETACH. SURGERY-REMOVE PLOMB/ENCIRC/GUT		1033.00	3

CRYOTHERAPY			
GLAUCOMA (IRIDECTOMY)		713.00	2
GLAUCOMA (CRYOTHERAPY TO CILIARY BODY)		1284.00	4
GLAUCOMA(TRABECULECTOMY)		1213.00	4
REMOVAL INTRA OCULAR FOREIGN BODY		1297.00	4
EXTRACAPS CATARACT WITH INTRA OCULAR LENS	614.00	2551.00	6
EXTRACAPS CATARACT W/OUT INTRA OCULAR LENS	579.00	1179.00	3
INTRACAPS CATARACT WITH INTRA OCULAR LENS	614.00	1144.00	3
INTRACAPS CATARACT W/OUT INTRA OCULAR LENS	579.00	1179.00	3
REMOVAL CORNEAL SUTURES	300.00	1144.00	3
PROBING	348.00		
BLEPHAROPLASTY	427.00		
ENTROPION	362.00		
ECTROPION	362.00		
CHALAZION	319.00		
EXCISION EYEBROW LESION	354.00		
EXCISION LID LESION	354.00		
EXCISION CANTHAL LESION	363.00		
EXCISION CONJUNCT. LESION	363.00		
BIOPSY LID	354.00		
BIOPSY LACRIMAL GLAND	359.00		
OTHER OPTHALMOLOGY PROC - ELECTIVE	527.00		
OTHER OPTHALMOLOGY PROC - EMERGENCY		1130.00	3
		1311.00	4

Appendix s (ii)

1994/95 Prices: Thereabouts Unit

THEREABOUTS UNIT

HOSPITALS NHS TRUST
ECR PRICE LIST 1994/95

VERSION: 2
DATE: 22–Apr–94

PRICED PROCEDURES	IN PATIENT £	DAY CASE £	OUT PATIENT PROCEDURE £
OPHTHALMOLOGY			
1. Operations for squint	843	559	
2. Extirpation of lesion of eyelid (chalazion)		307	115
3. Extirpation of lesion of conjunctiva (pterygium)		458	
4. Correction of ectropion, entropion and ptosis	837	437	115
5. Operations for glaucoma	902		115
6. Operations for obstruction of nasolacrimal duct	1,300	357	115
7. Extraction of lens (cataract) with or without prosthesis	976	709	138
8. Plastic operations on cornea (corneal graft)	1,638		
9. Destruction of lesion of retina (laser treatment of retinopathy)			138
ENT			
10. Myringotomy			
Insertion of grommet	591	357	
11. Exenteration of mastoid air cells (mastoidectomy)	504	357	
12. Stapedectomy	1,319		
13. Repair of eardrum (tympanoplasty)	1,410		
14. Labyrinthectomy	1,088		
15. Operations on septum of nose – septoplasty			
– sub–mucous	1,381		
16. Nasal – polypectomy	963		
17. Ethmoidectomy	902		
18. Operations on turbinate of nose (including turbinectomy)	1,036		127
19. Lesion of mucosa	711	433	
20. Drainage of sinus/Maxillary antrum		357	
21. Exploration of frontal sinus	873	433	
22. Excision of tonsil (tonsillectomy)	1,117		
	860		

THEREABOUTS UNIT

HOSPITALS NHS TRUST
ECR PRICE LIST 1994/95

VERSION: 2
DATE: 22-Apr-94

PRICED PROCEDURES	IN PATIENT £	DAY CASE £	OUT PATIENT PROCEDURE £
ENT CONT'D			
23. Adenoidectomy	776		
24. Endoscopic operation/examination of pharynx (pharyngoscopy)	952		
25. Endoscopic operation/examination of larynx (laryngoscopy)	629		127
26. Excision of larynx (laryngectomy)	6,881		
27. Block dissection of cervical lymph nodes			
CARDIO-THORACIC			
28. Endoscopic operation/examination of lower respiratory tract (bronchoscopy)	724	454	
29. Biopsy/excision of lesions of lung/bronchus	1,266	454	
30. Excision of lung (including lobectomy and pneumonectomy)			
31. Operations for valvular disease of the heart			
32. Operations for coronary (ischaemic heart) artery disease			
SURGERY & UROLOGY			
33. Partial thyroidectomy	2,004		
Total thyroidectomy	2,004		
Aberrant thyroid gland	2,004		
34. Operations on salivary glands and ducts	1,059		
35. Operations on parathyroid glands			
36. Open operations on varices of oesophagus	854	533	
37. Dilation of oesophagus	1,191	561	
Oesophagoscopy	787	230	
38. Total/partial excision of stomach (gastrectomy)	5,933		
39. Extracranial extirpation of vagus nerve (vagotomy)	2,304		
40. Endoscopic operation/examination of upper gastrointestinal tract etc	1,639	230	109
41. Endoscopic operation/examination of peritoneum (laparoscopy)	649		
42. Excision of lesion of small bowel	2,696		

HOSPITALS NHS TRUST
ECR PRICE LIST 1994/95

VERSION: 2
DATE: 22–Apr–94

PRICED PROCEDURES	IN PATIENT £	DAY CASE £	OUT PATIENT PROCEDURE £
SURGERY & UROLOGY CONT'D			
43. Partial/total colectomy	2,878		
Rectum excision	3,166		
44. Sigmoidoscopy	535	230	109
Colonoscopy	535	230	109
45. Exteriorisation of bowel (caecum/colon)	3,127		
46. Repair of prolapsed rectum	2,729		
47. Excision/destruction of haemorrhoid (haemorrhoidectomy)	973	464	109
48. Anal sphincter	456	248	
Pilonidal sinus	838		
Anal fissure	751	378	
49. Operations of gall bladder	1,612		
50. Operations of bile duct	2,560	518	
51. Mastectomy	1,792		
Breast Lesion	723	393	
52. Inguinal hernia	863	533	
Femoral hernia	863	533	
Incisional hernia	1,151		
53. Operations of varicose veins – single	583		109
Operations of varicose veins – bilateral	840		218
54. Operation for ingrowing toenail (excision/avulsion)	317	265	
Mr Ballham's elective work		85	
55. Skin biopsy	681	290	109
56. Excision or biopsy of lymph node	768	378	
57. Endoscopic operation/examination of bladder/ urethra (cystoscopy)	783	363	
58. Other operations of urethra (urethrotomy)	447	363	
59. Repair of urethra – urethroplasty	2,418		
open repair	2,418		
60. Endoscopic/open excision of prostate (prostatectomy)	1,665		

HOSPITALS NHS TRUST
ECR PRICE LIST 1994/5

VERSION: 2
DATE: 22–Apr–94

PRICED PROCEDURES	IN PATIENT £	DAY CASE £	OUT PATIENT PROCEDURE £
SURGERY & UROLOGY CONT'D			
61. Operations on hydrocoele sac	509	444	
62. Placement of testis/testes in scrotum (orchidopexy)	509	444	
63. Excision of vas deferens (male sterilisation)		444	
64. Operations on perpuce (circumcision)	509	444	
65. Operations on varicocele	618	569	
66. Removal of ureteric or renal calculus	1,659		
67. Extracorporeal fragmentation (lithotripsy) of calculus of kidney/ureter	823	678	
68. Total/partial excision of kidney (nephrectomy)	2,344		
GYNAECOLOGY			
69. Oophorectomy/salpingoophorectomy	1,444		
70. Ovarian cystectomy	1,552		
Wedge resection of ovary	1,559		
71. Diagnostic endoscopic (laparoscopy) examination/biopsy of fallopian tube	525	268	
72. Occlusion of fallopian tubes (female sterilisation)	538	268	
73. Patency tests of fallopian tubes	478	287	
74. Abdominal/vaginal excision of uterus (hysterectomy)	1,593		
75. Myomectomy	1,549		
76. D & C (including polypectomy)	399	287	
77. EUA	370	244	
78. Endoscopic operation/examination of uterus (hysteroscopy)	538	332	
79. Cone biopsy	586	376	115
Colposcopy		376	115
80. Perineorrhaphy & repair	1,401		
81. Excision of vulva (vulvectomy), extirpation/biopsy of lesion of vulva	4046 / 560	217	
82. Marsupialisation of Bartholin gland (remove cyst/abscess)	384	287	

HOSPITALS NHS TRUST
ECR PRICE LIST 1994/95

VERSION: 2
DATE: 22-Apr-94

PRICED PROCEDURES	IN PATIENT £	DAY CASE £	OUT PATIENT PROCEDURE £
ORTHOPAEDICS			
83. Operations on intervertebral discs	1,964		
84. Therapeutic lumbar epidural injection	504	364	
85. Arthroplasty – hip – single	3,587		
Arthroplasty – hip – bilateral	4,886		
Arthroplasty – knee – single	3,703		
Arthroplasty – knee – bilateral	5,117		
Arthroplasty – head of femur	2,950		
Arthroplasty – revisions (custom revisions to be quoted for)	4,069		
86. Implanted bone substance			
87. Endoscopic operation/examination of joint (arthroscopy)	556	467	153
88. Puncture of joint intra-articular aspiration/injection	455	243	
Mr Ballham's elective work		21	
89. Open operations on semilunar cartilage (meniscectomy)	1,007		
90. Osteotomy of Hallux valgus/rigidus – single	672		
90. Osteotomy of Hallux valgus/rigidus – bilateral	1,097		
91. Correction of hammer toe	1,113	443	
92. Palmer fasciectomy (Dupuytren's contracture)	1,036	684	
Mr Ballham's elective work		322	
93. Carpal tunnel release (decompression)	465	323	
Mr Ballham's elective work		277	
94. Release of constriction of tendon (trigger finger)	1,022	388	
Mr Ballham's elective work		277	
95. Excision/re-excision of ganglion	447	323	
Mr Ballham's elective work		277	
96. Operations on bursa (aspiration/excision/exploration)	809	404	153
97. Tibial Osteotomy	1,342		

THEREABOUTS UNIT

HOSPITALS NHS TRUST
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VERSION: 2
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PRICE PER F.C.E. PER SPECIALTY (excluding 97 procedures)	IN PATIENT £	DAY CASE £
SURGERY		
General Surgery – Aortic Aneurisms	3,044	
General Surgery & Urology – Other Episodes	999	305
Oral Surgery	760	443
Oral IVs		178
Plastic Surgery	1,719	432
E.N.T.	1,421	345
Trauma & Orthopaedics – Upper Limb Surgery – Prices Quoted Separately		
– Goretex	3,032	
– Other Orthopaedic Episodes	1,316	345
Ophthalmology – Retinal Detachment	1,674	
– Posterior Vitrectomy	1,976	
– Excision of Lid Tumour	1,775	
– Other Ophthalmology Episodes	1,116	381
Mr Ballaham's Elective Work – Prices Quoted Separately		
MEDICINE AND AGE CARE		
Medical Specialties		
Rheumatology	815	220
Age Care	2,535	
I.T.U *(1)	2,517	
C.C.U *(1)	4,410	
Dermatology	532	
Clinical Haematology	3,306	
Pain Clinic	1,678	260
		126

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HOSPITALS NHS TRUST
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PRICE PER F.C.E. PER SPECIALTY (excluding 97 procedures)	IN PATIENT £	DAY CASE £
WOMEN & CHILDREN'S		
Obstetrics – excluding caesareans	810	
Obstetrics – caesareans	2,349	
GP Maternity	602	
Gynaecology	398	268
Paediatrics	718	299
S.C.B.U.	4,007	
Overnight Observation Rate – all Specialties	231	
*(1) I.T.U. and C.C.U. charges in addition to stays in other Specialties		
(2) Pacemakers and MRIs not included in above prices, these are charged seperately		

HOSPITALS NHS TRUST
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OUT PATIENTS – HEREFORD ACUTE HOSPITALS	FIRST REFERRAL £	FOLLOW UP £
SURGERY		
General Surgery and Urology	85	43
Oral Surgery	67	67
Orthodontics	46	46
Plastic Surgery	29	15
Trauma & Orthopaedics	102	51
E.N.T.	86	43
Ophthalmology	76	39
MEDICINE AND AGE CARE		
Age Care	176	87
Medicine and Cardiology	113	56
Pain Clinic	84	42
Gastro Enterology	93	47
Dermatology	78	40
Clinical Haematology	44	44
Anti–Coag.	24	24
Neurology	99	49
Thoracic	131	66
G.U.	45	45
Diabetic	75	75
Rheumatology	103	103
WOMEN & CHILDREN'S		
Obstetrics	78	78
Gynaecology	66	33
Paediatrics	84	43
CT Scan	104	
Physiotherapy	14	14
* MRIs not included in the above prices, these are charged separately		

THEREABOUTS UNIT

HOSPITALS NHS TRUST
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OUT PATIENTS – COMMUNITY HOSPITALS	FIRST REFERRAL £	FOLLOW UP £
General Surgery and Urology	47	23
Ophthalmology	70	35
Age Care	93	93
Dermatology	65	42
Obstetrics	48	48
Paediatrics	53	53
Trauma & Orthopaedics	46	24

THEREABOUTS UNIT

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DAY CARE	PER ATTENDANCE £
Age Care	45

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HOSPITALS SHADOW NHS TRUST
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VERSION: 1
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PRICED PROCEDURES	IN PATIENT £	DAY CASE £	OUT PATIENT PROCEDURE £
OPHTHALMOLOGY			
1. Operations for squint	734	487	
2. Extirpation of lesion of eyelid (chalazion)		267	100
3. Extirpation of lesion of conjunctiva (pterygium)		399	
4. Correction of ectropion, entropion and ptosis	729	381	100
5. Operations for glaucoma	785		100
6. Operations for obstruction of nasolacrimal duct	1,133	311	100
7. Extraction of lens (cataract) with or without prosthesis	850	618	120
8. Plastic operations on cornea (corneal graft)	1,426		
9. Destruction of lesion of retina (laser treatment of retinopathy)			120
ENT			
10. Myringotomy	514	310	
Insertion of grommet	438	310	
11. Exenteration of mastoid air cells (mastoidectomy)	1,147		
12. Stapedectomy	1,226		
13. Repair of eardrum (tympanoplasty)	946		
14. Labyrinthectomy			
15. Operations on septum of nose – septoplasty	1,201		
– sub–mucous	837		
16. Nasal – polypectomy	784		110
17. Ethmoidectomy	901		
18. Operations on turbinate of nose (including turbinectomy)	618	376	
19. Lesion of mucosa		310	
20. Drainage of sinus/Maxillary antrum	759	376	
21. Exploration of frontal sinus	971		
22. Excision of tonsil (tonsillectomy)	748		

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PRICED PROCEDURES	IN PATIENT £	DAY CASE £	OUT PATIENT PROCEDURE £
ENT CONT'D			
23. Adenoidectomy	675		
24. Endoscopic operation/examination of pharynx (pharyngoscopy)	828		
25. Endoscopic operation/examination of larynx (laryngoscopy)	547		110
26. Excision of larynx (laryngectomy)	5,983		
27. Block dissection of cervical lymph nodes			
CARDIO–THORACIC			
28. Endoscopic operation/examination of lower respiratory tract (bronchoscopy)	629	394	
29. Biopsy/excision of lesions of lung/bronchus	1,100	394	
30. Excision of lung (including lobectomy and pneumonectomy)			
31. Operations for valvular disease of the heart			
32. Operations for coronary (ischaemic heart) artery disease			
SURGERY & UROLOGY			
33. Partial thyroidectomy	1,741		
Total thyroidectomy	1,741		
Aberrant thyroid gland	1,741		
34. Operations on salivary glands and ducts	920		
35. Operations on parathyroid glands			
36. Open operations on varices of oesophagus	742	462	
37. Dilation of oesophagus	1,035	487	
Oesophagoscopy	683	200	
38. Total/partial excision of stomach (gastrectomy)	5,154		
39. Extracranial extirpation of vagus nerve (vagotomy)	2,001		
40. Endoscopic operation/examination of upper gastrointestinal tract etc	1,424	200	95
41. Endoscopic operation/examination of peritoneum (laparoscopy)	564		
42. Excision of lesion of small bowel	2,342		

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PRICED PROCEDURES	IN PATIENT £	DAY CASE £	OUT PATIENT PROCEDURE £
SURGERY & UROLOGY CONT'D			
43. Partial/total colectomy	2,500		
Rectum excision	2,750		
44. Sigmoidoscopy	465	200	95
Colonoscopy	465	200	95
45. Exteriorisation of bowel (caecum/colon)	2,716		
46. Repair of prolapsed rectum	2,371		
47. Excision/destruction of haemorrhoid (haemorrhoidectomy)	845	403	95
48. Anal sphincter	396	215	
Pilonidal sinus	728		
Anal fissure	652	328	
49. Operations of gall bladder	1,400		
50. Operations of bile duct	2,224	451	
51. Mastectomy	1,557		
Breast Lesion	628	341	
52. Inguinal hernia	750	463	
Femoral hernia	750	463	
Incisional hernia	1,000		
53. Operations of varicose veins – single	506		95
Operations of varicose veins – bilateral	730		190
54. Operation for ingrowing toenail (excision/avulsion)	275	230	
Mr Ballham's elective work		74	
55. Skin biopsy	592	252	95
56. Excision or biopsy of lymph node	667	328	
57. Endoscopic operation/examination of bladder/ urethra (cystoscopy)	680	315	
58. Other operations of urethra (urethrotomy)	388	315	
59. Repair of urethra – urethroplasty	2,100		
open repair	2,100		
60. Endoscopic/open excision of prostate (prostatectomy)	1,446		

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PRICED PROCEDURES	IN PATIENT £	DAY CASE £	OUT PATIENT PROCEDURE £
SURGERY & UROLOGY CONT'D			
61. Operations on hydrocoele sac	442	386	
62. Placement of testis/testes in scrotum (orchidopexy)	442	386	
63. Excision of vas deferens (male sterilisation)		386	
64. Operations on perpuce (circumcision)	442	386	
65. Operations on varicocele	537	494	
66. Removal of ureteric or renal calculus	1,441		
67. Extracorporeal fragmentation (lithotripsy) of calculus of kidney/ureter	714	588	
68. Total/partial excision of kidney (nephrectomy)	2,036		
GYNAECOLOGY			
69. Oophorectomy/salpingoophorectomy	1,257		
70. Ovarian cystectomy	1,351		
Wedge resection of ovary	1,351		
71. Diagnostic endoscopic (laparoscopy) examination/biopsy of fallopian tube	457	233	
72. Occlusion of fallopian tubes (female sterilisation)	468	233	
73. Patency tests of fallopian tubes	416	250	
74. Abdominal/vaginal excision of uterus (hysterectomy)	1,387		
75. Myomectomy	1,348		
76. D & C (including polypectomy)	347	250	
77. EUA	322	212	
78. Endoscopic operation/examination of uterus (hysteroscopy)	468	289	
79. Cone biopsy	510	327	100
Colposcopy		327	100
80. Perineorrhaphy & repair	1,220		
81. Excision of vulva (vulvectomy), extirpation/biopsy of lesion of vulva	3,522	189	
82. Marsupialisation of Bartholin gland (remove cyst/abscess)	334	250	

THEREABOUTS UNIT

HOSPITALS SHADOW NHS TRUST
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VERSION: 1
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PRICED PROCEDURES	IN PATIENT £	DAY CASE £	OUT PATIENT PROCEDURE £
ORTHOPAEDICS			
83. Operations on intervertebral discs	1,706		
84. Therapeutic lumbar epidural injection	438	316	
85. Arthroplasty – hip – single	3,115		
Arthroplasty – hip – bilateral	4,242		
Arthroplasty – knee – single	3,215		
Arthroplasty – knee – bilateral	4,442		
Arthroplasty – head of femur	2,562		
Arthroplasty – revisions (custom revisions to be quoted for)	3,533		
86. Implanted bone substance			
87. Endoscopic operation/examination of joint (arthroscopy)	483	406	133
88. Puncture of joint intra-articular aspiration/injection	395	211	
Mr Ballham's elective work		18	
89. Open operations on semilunar cartilage (meniscectomy)	875		
90. Osteotomy of Hallux valgus/rigidus – single	584		
90. Osteotomy of Hallux valgus/rigidus – bilateral	953		
91. Correction of hammer toe	967	385	
92. Palmer fasciectomy (Dupuytren's contracture)	900	594	
Mr Ballham's elective work		280	
93. Carpal tunnel release (decompression)	404	281	
Mr Ballham's elective work		241	
94. Release of constriction of tendon (trigger finger)	888	337	
Mr Ballham's elective work		241	
95. Excision/re-excision of ganglion	388	281	
Mr Ballham's elective work		241	
96. Operations on bursa (aspiration/excision/exploration)	703	351	133
97. Tibial Osteotomy			

THEREABOUTS UNIT

HOSPITALS SHADOW NHS TRUST
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VERSION: 1
DATE: 12-Nov-93

PRICE PER F.C.E. PER SPECIALTY (excluding 97 procedures)	IN PATIENT £	DAY CASE £
SURGERY		
General Surgery – Aortic Aneurisms	2,644	
General Surgery & Urology – Other Episodes	868	265
Oral Surgery	660	385
Oral IVs		154
Plastic Surgery	1,493	375
E.N.T.	1,236	300
Trauma & Orthopaedics – Upper Limb Surgery	4,047	
– Goretex	2,632	
– Other Orthopaedic Episodes	1,143	269
Ophthalmology – Retinal Detachment	1,458	
– Posterior Vitrectomy	1,722	
– Excision of Lid Tumour	1,546	
– Other Ophthalmology Episodes	971	331
MEDICINE AND AGE CARE		
Medical Specialties	708	191
Age Care	2,186	
I.T.U *(1)	3,830	
C.C.U *(1)	462	
Dermatology	2,870	
Clinical Haematology	1,457	226
Pain Clinic		109

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PRICE PER F.C.E. PER SPECIALTY (excluding 97 procedures)	IN PATIENT £	DAY CASE £
WOMENS'S & CHILDREN'S		
Obstetrics – excluding caesareans	704	
Obstetrics – caesareans	2,041	
GP Maternity	523	
Gynaecology	346	233
Paediatrics	624	260
S.C.B.U.	3,484	
Overnight Observation Rate – all Specialties	200	
*(1) I.T.U. and C.C.U. charges in addition to stays in other Specialties		
(2) Pacemakers and MRIs not included in above prices, these are charged seperately		

HOSPITALS SHADOW NHS TRUST
DRAFT PRICE LIST 1994/95

VERSION: 1
DATE: 12-Nov-93

OUT PATIENTS – HEREFORD ACUTE HOSPITALS	FIRST REFERRAL £	FOLLOW UP £
SURGERY		
General Surgery and Urology	74	37
Oral Surgery	58	58
Orthodontics	40	40
Plastic Surgery	25	13
Trauma & Orthopaedics	89	44
E.N.T.	75	37
Ophthalmology	66	34
MEDICINE AND AGE CARE		
Age Care	153	76
Medicine and Cardiology	98	49
Pain Clinic	73	36
Gastro Enterology	81	41
Dermatology	68	35
Clinical Haematology	38	38
Anti-Coag.	21	21
Neurology	86	43
Thoracic	114	57
G.U.	39	39
Oncology	34	34
Diabetic	65	65
Rheumatology	90	90
WOMEN'S & CHILDREN'S		
Obstetrics	68	68
Gynaecology	57	29
Paediatrics	73	37
* MRIs not included in the above prices, these are charged separately		

THEREABOUTS UNIT

HOSPITALS SHADOW NHS TRUST
DRAFT PRICE LIST 1994/95

VERSION: 1
DATE: 12-Nov-93

OUT PATIENTS – COMMUNITY HOSPITALS	FIRST REFERRAL £	FOLLOW UP £
General Surgery and Urology	41	20
Ophthalmology	61	30
Age Care	81	81
Dermatology	56	36
Obstetrics	42	42
Paediatrics	46	46

THEREABOUTS UNIT

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DAY CARE	PER ATTENDANCE £
Age Care	39

HOSPITALS SHADOW NHS TRUST

1994/5 PRICES FOR BUDGET SETTING

THEREABOUTS UNIT

INPATIENT AND DAY CASES (TOTAL PRICE INCL. OF CAPITAL CHARGES)

12-Nov-93

SPECIALTY	NUMBER OF INPATIENTS	PRICE	TOTAL	NUMBER OF DAY CASES	PRICE	TOTAL		AVERAGE PRICE
OPHTHALMOLOGY								
1. SQUINT	41	734	30,094	41	487	19,967		
2. CHALAZION			0	55	267	14,685	GROUP A	375
3. PTERYGIUM			0	12	399	4,788	GROUP B	801
4. ECTOROPION & ENTROPIAN & PTOSIS	15	729	10,935	58	381	22,098		
5. GLAUCOMA	104	785	81,640			0		
6. NASOLACRIMAL	22	1,133	24,926	30	311	9,330		
7. CATARACT	700	850	595,000	98	818	80,564		
8. CORNEAL	13	1,426	18,538			0		
9. RETINPATHIES			0			0		
ENT								
10. MYRINGOTOMY								
INSERTION OF GROMMET	3	514	1,542	15	310	4,650		
11. MASTOIDECTOMY	24	438	10,512	237	310	73,470	GROUP A	365
12. STAPEDECTOMY	24	1,147	27,528			0	GROUP B	628
13. TYMPANOPLASTY			0			0	GROUP C	832
14. LABYRINTHECTOMY	30	946	28,380			0		
15. SEPTOPLASTY			0			0		
SUB-MUCOUS	13	1,201	15,613			0		
16. POLYPECTOMY	45	837	37,665			0		
17. ETHMOIDECTOMY	15	784	11,760			0		
18. TURBINECTOMY	13	901	11,713			0		
19. LESION OF MUCOSA	28	818	17,304	7	376	2,632		
20. DRAINAGE OF SINUS			0	19	310	5,890		
20. MAXILLARY ANTRUM			0			0		
21. FRONTAL SINUS	3	759	2,277			0		
22. TONSILLECTOMY	19	971	18,449			0		
23. ADENOIDECTOMY	203	748	151,844			0		
24. PHARYNGOSCOPY	17	675	11,475			0		
25. LARYNGOSCOPY	11	828	9,108			0		
26. LARYNGECTOMY	40	547	21,880			0		
27. BLOCK DISSECTION			0			0		
CARDIO-THORACIC			0			0		
28. BRONCHOSCOPY								
29. LUNG LESION	47	629	29,563	17	394	6,698		
30. LOBECTOMY/PNEUMONECTOMY	3	1,100	3,300			0	GROUP A	567
31. VALVULAR			0			0	GROUP B	1,100
32. ISCHAEMIC			0			0	GROUP C	
						0		

HOSPITALS SHADOW NHS TRUST

1994/5 PRICES FOR BUDGET SETTING

THEREABOUTS UNIT

INPATIENT AND DAY CASES (TOTAL PRICE INCL. OF CAPITAL CHARGES)

12-Nov-93

SPECIALTY	NUMBER OF INPATIENTS	PRICE	TOTAL	NUMBER OF DAY CASES	PRICE	TOTAL		AVERAGE PRICE
SURGERY & UROLOGY								
33. THYROIDECTOMY	22	1,741	38,302			0		
34. SALIVARY GLAND	13	920	11,960			0	GROUP AA	294
35. PARATHYROID GLAND			0			0	GROUP A	685
36. VARICES OF OESOPHAGUS			0			0	GROUP B	1,492
37. OESOPHAGOSCOPY	4	683	2,732	13	200	2,600	GROUP C	2,874
37. DILATION OF OESOPHAGUS	6	1,035	6,210	71	487	34,577		
38. GASTRECTOMY	7	5,154	36,078			0		
39. VAGOTOMY	6	2,001	12,006			0		
40. ENDOSCOPY	46	1,424	65,504	1,033	200	206,600		
41. LAPAROSCOPY	115	564	64,860			0		
42. LESION OF SMALL BOWEL	1	2,342	2,342			0		
43. COLECTOMY	29	2,500	72,500			0		
43. RECTUM EXCISION	21	2,750	57,750			0		
44. SIGMOIDOSCOPY/	81	465	37,665	358	200	71,600		
44. COLONOSCOPY	35	465	16,275	157	200	31,400		
45. EXTERIORISATION OF BOWEL	16	2,716	43,456			0		
46. PROLAPSED RECTUM	3	2,371	7,113			0		
47. HAEMORRHIODECTOMY	26	845	21,970	8	403	3,224		
48. ANAL SPHINCTER	13	396	5,148	26	215	5,590		
PILONIDAL SINUS	16	728	13,104			0		
ANAL FISSURE	8	652	5,216	2	328	656		
49. GALL BLADDER	37	1,400	51,800			0		
50. BILE DUCT	92	2,224	204,608	3	451	1,353		
51. MASTECTOMY	36	1,557	56,052			0		
BREAST LESION	65	628	40,820	43	341	14,663		
52. INGUINAL FEMORAL HERNIA	171	750	128,250	21	463	9,723		
INCISIONAL HERNIA	13	1,000	13,000			0		
53. VARICOSE VEINS - SINGLE	81	506	40,986			0		
VARICOSE VEINS - BILATERAL			0			0		
54. INGROWING TOENAIL	1	275	275	1	230	230		
MR BALLHAM'S ELECTIVE WORK				130	74			
55. SKIN BIOPSY	69	592	40,848	184	252	46,368		
56. LYMPH NODE EXCISION	25	667	16,675	10	328	3,280		
57. CYSTOSCOPY	121	680	82,280	495	315	155,925		
58. URETHROTOMY	8	388	3,104	18	315	5,670		
59. URETHROPLASTY	2	2,100	4,200			0		
60. PROSTATECTOMY	140	1,446	202,440			0		
61. HYDROCELE	11	442	4,862	3	386	1,158		
62. ORCHIDOPEXY	11	442	4,862	10	386	3,860		
63. STERILISATION			0	82	386	31,652		
64. CIRCUMCISION	21	442	9,282	64	386	24,704		
65. VARICOCELE	1	537	537	0	494	0		
66 RENAL CALCULUS	3	1,441	4,323			0		
67. LITHOTRIPSY	5	714	3,570	5	588	2,940		
68. NEPHRECTOMY	7	2,036	14,252			0		

HOSPITALS SHADOW NHS TRUST

1994/5 PRICES FOR BUDGET SETTING

THEREABOUTS UNIT

INPATIENT AND DAY CASES (TOTAL PRICE INCL. OF CAPITAL CHARGES)

12-Nov-93

SPECIALTY	NUMBER OF INPATIENTS	PRICE	TOTAL	NUMBER OF DAY CASES	PRICE	TOTAL		AVERAGE PRICE
GYNAECOLOGY								
69. OOPHORECTOMY	14	1,257	17,598			0		
70. CYSTECTOMY/WEDGE RESECTION	17	1,351	22,967			0	GROUP A	315
71. LAPAROSCOPY	1	457	457	1	233	233	GROUP B	394
72. FEMALE STERILISATION	139	468	65,052	33	233	7,689	GROUP C	1,344
73. PATENCY TEST	12	416	4,992	3	250	750		
74. HYSTERECTOMY	215	1,387	298,205			0		
75. MYOMECTOMY			0			0		
76. D AND C	89	347	30,883	210	250	52,500		
77. EUA	3	322	966	8	212	1,272		
78. HYSTEROSCOPY	81	466	37,908	51	289	14,739		
79. CONE BIOPSY	17	510	8,670	8	327	1,962		
COLPOSCOPY			0	45	327	14,715		
80. PERINEORRHAPHY & REPAIR	66	1,220	80,520			0		
81. VULVAL/VULVECTOMY			0	29	189	5,481		
82. BARTHOLIN'S CYST	2	334	668	1	250	250		
ORTHOPAEDICS								
83. INTERVERTEBRAL DISCS	38	1,706	64,828			0		
84. LUMBAR INJECTION	4	438	1,752	39	318	12,324	GROUP A	209
85. ARTHROPLASTY - HIP - SINGLE	167	3,115	520,205			0	GROUP B	504
ARTHROPLASTY - HIP - BILATERAL			0			0	GROUP C	2,974
ARTHROPLASTY - KNEE - SINGLE	104	3,215	334,360			0		
ARTHROPLASTY - KNEE - BILATERAL	1	4,242	4,242			0		
ARTHROPLASTY - HEAD OF FEMU	4	2,562	10,248			0		
86. IMPLANTED BONE SUBSTANCE			0			0		
87. ARTHROSCOPY	78	483	37,674	211	406	85,666		
88. JOINT INJECTIONS	47	395	18,565	78	211	16,458		
MR BALLHAM'S ELECTIVE WORK				130	18			
89. MENISCECTOMY	3	875	2,625			0		
90. HALLUX VALGUS - SINGLE	15	584	8,760			0		
90. HALLUX VALGUS - BILATERAL			0			0		
91. HAMMER TOE	2	967	1,934	1	385	385		
92. DUPUYTREN'S CONTRACTURE	21	900	18,900	7	594	4,158		
MR BALLHAM'S ELECTIVE WORK				24	280			
93. CARPAL TUNNEL	38	404	15,352	37	281	10,397		
MR BALLHAM'S ELECTIVE WORK				140	241			
94. TRIGGER FINGER	8	888	7,104	11	337	3,707		
MR BALLHAM'S ELECTIVE WORK				60	241			
95. GANGLION	9	368	3,492	21	281	5,901		
MR BALLHAM'S ELECTIVE WORK				140	241			
96. BURSA	2	703	1,406	0	351	0		
97. TIBIAL OSTEOTOMY			0			0		

HOSPITALS SHADOW NHS TRUST

1994/5 PRICES FOR BUDGET SETTING

THEREABOUTS UNIT

INPATIENT AND DAY CASES (CAPITAL CHARGES ONLY)

12-Nov-93

SPECIALTY	NUMBER OF INPATIENTS	PRICE	TOTAL	NUMBER OF DAY CASES	PRICE	TOTAL		AVERAGE PRICE
OPHTHALMOLOGY								
1. SQUINT	41	110	4,510	41	89	3,649		
2. CHALAZION			0	55	41	2,255	GROUP A	64
3. PTERYGIUM			0	12	70	840	GROUP B	129
4. ECTOROPION & ENTROPIAN & PTOSIS	15	122	1,830	58	70	4,060		
5. GLAUCOMA - ELECTIVE	104	103	10,712			0		
6. NASOLACRIMAL	22	199	4,378	30	50	1,500		
7. CATARACT	700	138	96,600	98	119	11,662		
8. CORNEAL	13	205	2,665			0		
9. RETINPATHIES			0			0		
ENT								
10. MYRINGOTOMY								
INSERTION OF GROMMET	3	55	165	15	31	465		
11. MASTOIDECTOMY	24	46	1,104	237	31	7,347	GROUP A	37
12. STAPEDECTOMY	24	111	2,664			0	GROUP B	66
13. TYMPANOPLASTY			0			0	GROUP C	84
14. LABYRINTHECTOMY	30	91	2,730			0		
15. SEPTOPLASTY			0			0		
SUB-MUCOUS	13	121	1,573			0		
16. POLYPECTOMY	45	87	3,915			0		
17. ETHMOIDECTOMY	15	83	1,245			0		
18. TURBINECTOMY	13	94	1,222			0		
19. LESION OF MUCOSA	28	64	1,792	7	36	252		
20. DRAINAGE OF SINUS			0	19	31	589		
20. MAXILLARY ANTRUM			0			0		
21. FRONTAL SINUS	3	80	240			0		
22. TONSILLECTOMY	19	94	1,786			0		
23. ADENOIDECTOMY	203	76	15,428			0		
24. PHARYNGOSCOPY	17	72	1,224			0		
25. LARYNGOSCOPY	11	90	990			0		
26. LARYNGECTOMY	40	57	2,280			0		
27. BLOCK DISSECTION			0			0		
CARDIO-THORACIC			0			0		
28. BRONCHOSCOPY								
29. LUNG LESION	47	47	2,209	17	30	510		
30. LOBECTOMY/PNEUMONECTOMY	3	83	249			0	GROUP A	42
31. VALVULAR			0			0	GROUP B	83
32. ISCHAEMIC			0			0	GROUP C	

HOSPITALS SHADOW NHS TRUST

1994/5 PRICES FOR BUDGET SETTING

THEREABOUTS UNIT

INPATIENT AND DAY CASES (CAPITAL CHARGES ONLY)

12-Nov-93

SPECIALTY	NUMBER OF INPATIENTS	PRICE	TOTAL	NUMBER OF DAY CASES	PRICE	TOTAL		AVERAGE PRICE
SURGERY & UROLOGY								
33. THYROIDECTOMY	22	125	2,750			0		
34. SALIVARY GLAND	13	66	858			0	GROUP AA	26
35. PARATHYROID GLAND			0			0	GROUP A	51
36. VARICES OF OESOPHAGUS			0			0	GROUP B	101
37. OESOPHAGOSCOPY	4	35	140	13	25	325	GROUP C	207
37. DILATION OF OESOPHAGUS	6	74	444	71	35	2,485		
38. GASTRECTOMY	7	371	2,597			0		
39. VAGOTOMY	6	144	864			0		
40. ENDOSCOPY	46	100	4,600	1,033	24	24,792		
41. LAPAROSCOPY	115	41	4,715			0		
42. LESION OF SMALL BOWEL	1	168	168			0		
43. COLECTOMY	29	180	5,220			0		
43. RECTUM EXCISION	21	198	4,158			0		
44. SIGMOIDOSCOPY/	81	39	3,159	358	23	8,234		
44. COLONOSCOPY	35	39	1,365	157	23	3,611		
45. EXTERIORISATION OF BOWEL	16	196	3,136			0		
46. PROLAPSED RECTUM	3	171	513			0		
47. HAEMORRHIODECTOMY	28	61	1,586	8	29	232		
48. ANAL SPHINCTER	13	29	377	26	15	390		
PILONIDAL SINUS	18	52	936			0		
ANAL FISSURE	8	47	376	2	24	48		
49. GALL BLADDER	37	101	3,737			0		
50. BILE DUCT	92	160	14,720	3	56	168		
51. MASTECTOMY	36	112	4,032			0		
BREAST LESION	65	45	2,925	43	24	1,032		
52. INGUINAL FEMORAL HERNIA	171	54	9,234	21	33	693		
INCISIONAL HERNIA	13	72	936			0		
53. VARICOSE VEINS - SINGLE	81	36	2,916			0		
VARICOSE VEINS - BILATERAL			0			0		
54. INGROWING TOENAIL	1	20	20	1	16	16		
MR BALLHAM'S ELECTIVE WORK				130	7			
55. SKIN BIOPSY	69	43	2,967	184	18	3,312		
56. LYMPH NODE EXCISION	25	48	1,200	10	24	240		
57. CYSTOSCOPY	121	45	5,445	495	22	10,890		
58. URETHROTOMY	8	26	208	18	22	396		
59. URETHROPLASTY	2	138	276			0		
60. PROSTATECTOMY	140	95	13,300			0		
61. HYDROCELE	11	31	341	3	27	81		
62. ORCHIDOPEXY	11	31	341	10	27	270		
63. STERILISATION			0	82	27	2,214		
64. CIRCUMCISION	21	31	651	64	29	1,856		
65. VARICOCELE	1	38	38			0		
66 RENAL CALCULUS	3	97	291			0		
67. LITHOTRIPSY	5	13	65	5	5	25		
68. NEPHRECTOMY	7	137	959			0		

HOSPITALS SHADOW NHS TRUST

1994/5 PRICES FOR BUDGET SETTING

THEREABOUTS UNIT

INPATIENT AND DAY CASES (CAPITAL CHARGES ONLY)

12-Nov-93

SPECIALTY	NUMBER OF INPATIENTS	PRICE	TOTAL	NUMBER OF DAY CASES	PRICE	TOTAL		AVERAGE PRICE
GYNAECOLOGY								
69. OOPHORECTOMY	14	182	2,548			0		
70. CYSTECTOMY/WEDGE RESECTION	17	195	3,315			0	GROUP A	46
71. LAPAROSCOPY	1	66	66	1	34	34	GROUP B	57
72. FEMALE STERILISATION	139	68	9,452	33	34	1,122	GROUP C	194
73. PATENCY TEST	12	60	720	3	36	108		
74. HYSTERECTOMY	215	200	43,000			0		
75. MYOMECTOMY			0			0		
76. D AND C	89	50	4,450	210	36	7,560		
77. EUA	3	47	141	6	31	186		
78. HYSTEROSCOPY	81	68	5,508	51	42	2,142		
79. CONE BIOPSY	17	74	1,258	6	47	282		
COLPOSCOPY			0	45	47	2,115		
80. PERINEORRHAPHY & REPAIR	66	176	11,616			0		
81. VULVAL/VULVECTOMY			0	29	27	783		
82. BARTHOLIN'S CYST	2	48	96	1	36	36		
ORTHOPAEDICS								
83. INTERVERTEBRAL DISCS	38	118	4,484			0		
84. LUMBAR INJECTION	4	30	120	39	22	858	GROUP A	15
85. ARTHROPLASTY - HIP - SINGLE	167	179	29,893			0	GROUP B	35
ARTHROPLASTY - HIP - BILATERAL			0			0	GROUP C	172
ARTHROPLASTY - KNEE - SINGLE	104	179	18,616			0		
ARTHROPLASTY - KNEE - BILATERAL	1	224	224			0		
ARTHROPLASTY - HEAD OF FEMU	4	169	676			0		
86. IMPLANTED BONE SUBSTANCE			0			0		
87. ARTHROSCOPY	76	34	2,652	211	29	6,119		
88. JOINT INJECTIONS	47	27	1,269	78	15	1,170		
MR BALLHAM'S ELECTIVE WORK				130	2			
89. MENISCECTOMY	3	60	180			0		
90. HALLUS VALGUS - SINGLE	15	41	615			0		
90. HALLUS VALGUS - BILATERAL			0			0		
91. HAMMER TOE	2	66	132	1	27	27		
92. DUPUYTREN'S CONTRACTURE	21	63	1,323	7	42	294		
MR BALLHAM'S ELECTIVE WORK				24	28			
93. CARPAL TUNNEL	38	28	1,064	37	20	740		
MR BALLHAM'S ELECTIVE WORK				140	24			
94. TRIGGER FINGER	8	61	488	11	24	264		
MR BALLHAM'S ELECTIVE WORK				60	24			
95. GANGLION	9	27	243	21	20	420		
MR BALLHAM'S ELECTIVE WORK				140	24			
96. BURSA	2	48	96			0		
97. TIBIAL OSTEOTOMY			0			0		

HOSPITALS SHADOW NHS TRUST

THEREABOUTS UNIT

1994/5 PRICES FOR BUDGET SETTING

OUT PATIENTS

	REVENUE	CAPITAL CHARGES	TOTAL
HEREFORD ACUTE HOSPITALS			
General Surgery	36.74	5.57	42.31
Urology	36.74	5.57	42.31
Trauma and Orthopaedics	50.03	5.17	55.20
ENT	48.49	5.39	53.88
Ophthalmology	36.91	2.73	39.64
Oral Surgery	49.87	8.37	58.24
Orthodontics	33.49	5.99	39.48
Plastic Surgery	14.00	1.00	15.00
Anaesthetics (Pain Clinic)	92.94	1.16	94.10
General Medicine	50.87	7.80	58.67
Gastroenterlogy	47.85	6.75	54.60
Haematology	33.86	4.34	38.20
Anti – Coag	19.22	1.45	20.67
Dermatology	43.51	2.37	45.88
Thoracic Medicine	72.83	8.49	81.32
Genito –urinary Medicine	35.62	3.35	38.97
Oncology	30.62	3.23	33.85
Neurology	57.90	8.07	65.97
Rheumatology	78.33	11.67	90.00
Paediatrics	36.94	5.28	42.22
Geriatric Medicine	78.88	12.09	90.97
Diabetics	61.63	3.46	65.09
Gynaecology	36.33	2.43	38.76
Obstetrics	60.74	6.91	67.65

COMMUNITY HOSPITALS			
General Surgery & Urology	31.80	0.00	31.80
Ophthalmology	39.19	0.00	39.19
Dermatology	46.71	0.00	46.71
Paediatrics	46.00	0.00	46.00
Age Care	81.00	0.00	81.00
Obstetrics	42.00	0.00	42.00

FILE: A:BUDGSETO

DATE: 12th November 1993

HOSPITALS SHADOW NHS TRUST

THEREABOUTS UNIT

1994/5 PRICES FOR BUDGET SETTING

DIRECT ACCESS INVESTIGATIONS AND TREATMENTS

		REVENUE	CAPITAL CHARGES	TOTAL
PATHOLOGY	(PER REQUEST)			
Haematology		4.16	0.84	5.00
Histology		16.56	1.78	18.34
Cytology		5.75	0.79	6.54
Chemical Pathology		5.53	0.47	6.00
AUDIOLOGY	(PER ATTENDANCE)	11.61	3.39	15.00
PHYSIOTHERAPY	(PER ATTENDANCE)	11.21	0.96	12.17
OCCUPATIONAL THERAPY	(PER ATTENDANCE)	13.02	1.17	14.19
DIETETICS	(PER ATTENDANCE)			
Hospital / Clinic		5.21	0.11	5.32
Domiciliary		32.98	0.70	33.68
RADIOLOGY	(PER UNIT)			
Korner Unit	A	8.81	3.09	11.90
Korner Unit	B	22.01	7.74	29.75
Korner Unit	C	52.83	18.57	71.40
Korner Unit	D	105.67	37.13	142.80
Korner Unit	E	264.17	92.83	357.00
Korner Unit	F	528.33	185.67	714.00

FILE: A: BUDGSET

DATE: 11th November 1993

SPECIALTY	INPATIENTS ALOS	RATE PER DAY	TOTAL	THEATRE TIME	THEATRE RATE	TOTAL	HIGH COST	TOTAL	ADJ	REVISED TOTAL	1993/4 PRICES	REG AV 1993/4	DAY CASES RATE PER DAY	THEATRE TIME	THEATRE RATE	TOTAL	ADJ	TOTAL	1993/4 PRICES	REG AV 1993/4	OUT PATIENT TOTAL	199 PRIC
SURGERY																						
33. THYROIDECTOMY	5	137	685	130	8.15	1059.5		1,745	(4)	1,741	1,741	1,187	n/a									
34. SALIVARY GLAND	2.9	137	397.3	50	8.15	407.5		805	115	920	920	809	n/a									
35. PARATHYROID GLAND	n/a												n/a									
36. VARICES OF OESOPHAGUS	2.6	137	356.2	48	8.15	391.2		747	(5)	742	742	1,713	98	48	8.15	391.2	(25)	462	462	697		
37. OESOPHAGOSCOPY/	2.3	255	586.5	n/a		98		683		683	382	493	91	n/a		98	13	200	98	229		
37. DILATION OF OESOPHAGUS	4.7	137	643.9	48	8.15	391.2		1,035		1,035	382	496	98	48	8.15	391.2		487	98	222		
38. GASTRECTOMY	18.4	137	2246.8	180	8.15	1548.5		3,795	1,359	5,154	5,154	2,770	n/a									
39. VAGOTOMY	8	137	1096	100	8.15	815		1,911	90	2,001	2,001	1,758	n/a									
40. ENDOSCOPY	9.7	129	1251.3	n/a		98		1,347	77	1,424	1,424	680	91	n/a		98	13	200	200	195	95	
41. LAPAROSCOPY	2.7	137	369.9	30	8.15	244.5		614	(50)	564	564	459	n/a									
42. LESION OF SMALL BOWEL	9.5	137	1301.5	110	8.15	896.5		2,198	144	2,342	2,342	1,734	n/a									
43. COLECTOMY (Partial & Total)	14	137	1918	130	8.15	1059.5		2,978	(478)	2,500	3,245	2,735	n/a									
43. RECTUM EXCISION	20.3	137	2781.1	160	8.15	1304		4,085	(1,335)	2,750	3,245	2,797	n/a									
44. SIGMOIDOSCOPY/COLONOSCOPY	2.7	134	361.8	n/a		98		458	7	465	465	539	92	n/a		98	12	200	199	238	95	9
45. EXTERIORISATION OF BOWEL	12.9	137	1767.3	85	8.15	692.75		2,460	256	2,716	2,716	2,141	n/a									
46. PROLAPSED RECTUM	9.3	137	1274.1	100	8.15	815		2,089	282	2,371	2,371	1,640	n/a									
47. HAEMORRHIODECTOMY	3.7	137	506.9	40	8.15	326		833	12	845	845	868	98	40	8.15	326	(19)	403	403	426	95	9
48. ANAL SPHINCTER	2	137	274	15	8.15	122.25		396		396	1,603	549	96	15	8.15	122.25	(3)	215	215	253		
48. PILONIDAL SINUS	2.3	137	315.1	50	8.15	407.5		723	5	728	728	572	n/a									
48. ANAL FISSURE	1.5	137	205.5	20	8.15	163		368	283	652	652	559	96	20	8.15	163	69	328	328	274		
49. GALL BLADDER	8.8	137	1205.6	100	8.15	815		2,021	(621)	1,400	1,320	1,534	n/a									
50. BILE DUCT	6.8	137	931.6	100	8.15	815		1,747	477	2,224	2,224	1,993	98			300	55	451	451	690		
51. MASTECTOMY	7.2	137	986.4	70	8.15	570.5		1,557		1,557	1,038	1,055	n/a									
BREAST LESION	2.8	137	383.6	30	8.15	244.5		628		628	1,038	859	96	30	8.15	244.5		341	409	335		
52. INGUINAL/FEMORAL HERNIA	2.4	137	328.8	42	8.15	342.3		671	79	750	789	692	96	45	8.15	366.75		463	514	374		
INCISIONAL HERNIA	7.8	137	1068.6	60	8.15	489		1,558	(558)	1,000	789	900	n/a									
53. VARICOSE VEINS – SINGLE	1.4	137	191.8	45	8.15	366.75		559	(53)	506	506	551	n/a								95	99
VARICOSE VEINS – BILATERAL	1.4	137	191.8	90	8.15	733.5		925	(195)	730	730	551	n/a								190	199
54. INGROWING TOENAIL – SURGERY	2	137	274	17	8.15	138.55		413	(138)	275	275	360	96	17	8.15	138.55	(5)	230	230	225		
54. INGROWING TOENAIL – A & E	n/a			n/a								360				74		74		225		
55. SKIN BIOPSY	2	137	274	20	8.15	163		437	155	592	592	398	96	20	8.15	163	(7)	252	252	230	95	99
56. LYMPH NODE EXCISION	4.5	137	616.5	20	8.15	163		780	(113)	667	667	532	96	20	8.15	163	69	328	328	256		
BALANCE AVERAGE PRICE										889	893							265	265			

SURGERY & UROLOGY OUT PATIENTS

Need Surgery & Urology Out Patient Procedure Price to be £95 therefore £95 x 501 = £47,585

First	1,860	x	2	=	3,720
Follow–up	7,218	x	1	=	7,218
					10,938

Quantum £312,347+13,533+110,881+(218,815–202,730–47,585) / 10,938

= £37.05

				PRICE	1993/4 PRICE
Procedure				£95	£99
First	£37.05	x	2	£74	£72
Follow–up	£37.05	x	1	£37	£36

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Examples of cost shifting

THEREABOUTS UNIT

APPENDIX T

SPECIALTY	INPATIENTS												DAY CASES								OUT PATIENT	
	ALOS	RATE PER DAY	TOTAL	THEATRE TIME	THEATRE RATE	TOTAL	HIGH COST	TOTAL	ADJ	REVISED TOTAL	1993/4 PRICES	REG AV 1993/4	RATE PER DAY	THEATRE TIME	THEATRE RATE	TOTAL	ADJ	TOTAL	1993/4 PRICES	REG AV 1993/4	TOTAL	1993 PRIC
UROLOGY																						
57. CYSTOSCOPY	3.1	126	390.6	30	7.91	237.3		628	52	680	680	537	88	30	7.91	237.3	(10)	315	315	214		
58. URETHROTOMY	2.5	126	315	30	7.91	237.3		552	(164)	388	388	480	88	30	7.91	237.3	(10)	315	315	240		
59. URETHROPLASTY/OPEN REPAIR	10.5	126	1323	100	7.91	791		2,114	(14)	2,100	1,821	1,654	n/a									
60. PROSTATECTOMY	6.6	126	831.6	70	7.91	553.7		1,385	61	1,446	1,446	1,343	n/a									
61. HYDROCELE	1	126	126	40	7.91	316.4		442		442	576	449	88	40	7.91	316.4	(18)	388	388	279	95	
62. ORCHIDOPEXY	1	126	126	40	7.91	316.4		442		442		431	88	40	7.91	316.4	(18)	388	529	294		
63. STERILISATION	n/a												88	40	7.91	316.4	(18)	388	388	220		
64. CIRCUMCISION	1	126	126	40	7.91	316.4		442		442	678	397	88	40	7.91	316.4	(18)	388	388	255		
65. VARICOCELE	1	126	126	55	7.91	435.05		561	(24)	537	537	423	88	55	7.91	435.05	(29)	494	494	259		
66 RENAL CALCULUS	8.9	126	869.4	100	7.91	791		1,660	(219)	1,441	1,441	1,334	n/a									
67. LITHOTRIPSY	1.7	126	214.2	n/a			500	714		714		716	88	n/a		0	500	588	452	523		
68. NEPHRECTOMY	8	126	1008	130	7.91	1028.3		2,036		2,036	2,616	1,925	n/a									
AORTIC ANEURISMS	7.8	126	982.8	210	7.91	1661.1		2,644		2,644												
BALANCE AVERAGE PRICE										1,677	893							265	265			

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S&S

Examples of cost shifting

SURGERY & UROLOGY OUT PATIENTS

Need Surgery & Urology Out Patient Procedure Price to be £95 therefore £95 x 501 = £47,595

First	1,860	x	2	=	3,720
Follow-up	7,218	x	1	=	7,218
					10,938

Quantum £312,347 + 13,533 + 110,881 + (218,815 − 202,730 − 47,595) / 10,938

= £37.05

				PRICE	1993/4 PRICE
Procedure				£95	£99
First	£37.05	x	2	£74	£72
Follow-up	£37.05	x	1	£37	£36

THEREABOUTS UNIT

SPECIALTY	INPATIENTS ALOS	RATE PER DAY	TOTAL	THEATRE TIME	THEATRE RATE	TOTAL	HIGH COST	TOTAL	ADJ	REVISED TOTAL	1993/4 PRICES	REG AV 1993/4	DAY CASES RATE PER DAY	THEATRE TIME	THEATRE RATE	TOTAL	ADJ	TOTAL	1993/4 PRICES	REG AV 1993/4	OUT PATIENTS TOTAL	1993 PRIC
GYNAECOLOGY																						
69. OOPHORECTOMY	7.9	146	1153.4	40	8.13	325.2		1,479	(348)	1,131	1,257	1,338	n/a									
70. OVARIAN CYSTECTOMY/WEDGE RES.	7.8	146	1138.8	45	8.13	365.85		1,505	(289)	1,216	1,351	1,301	n/a									
71. LAPAROSCOPY	2	146	292	20	8.13	162.6		455	(44)	411	457	384	n/a									
72. FEMALE STERILISATION	2.4	146	350.4	25	8.13	203.25		554	(133)	421	468	410	n/a									
73. PATENCY TEST	2	146	292	20	8.13	162.6		455	(81)	374	416	406	102	20	8.13	162.6	(15)	250	250	280	85	
74. HYSTERECTOMY	7.1	146	1036.6	55	8.13	447.15		1,484	(236)	1,248	1,387	1,483	n/a									
75. MYOMECTOMY	8	146	1168	50	8.13	406.5		1,575	(362)	1,213	1,348	1,321	n/a									
76. D AND C	1	146	146	20	8.13	162.6		309	3	312	347	339	102	20	8.13	162.6	(15)	250	250	229		
77. EUA	1.5	146	219	15	8.13	121.95		341	(51)	290	322	310	102	15	8.13	121.95	(12)	212	212	215		
78. HYSTEROSCOPY	1.75	146	255.5	25	8.13	203.25		459	(38)	421	468	476	102	25	8.13	203.25	(16)	289	289	286		
79. CONE BIOPSY	1.7	146	248.2	30	8.13	243.9		492	(33)	459	510	429	102	30	8.13	243.9	(19)	327	327	278		
COLPOSCOPY	n/a												102	30	8.13	243.9	(19)	327	327	234	85	8
80. PERINEORRHAPHY & REPAIR	5.6	146	817.6	60	8.13	487.8		1,305	(207)	1,098	1,220	1,449	n/a									
81. VULVAL/VULVECTOMY	20	146	2920	100	8.13	813		3,733	(563)	3,170	3,522	1,674	102	12	8.13	97.56	(11)	189	189	469	85	61
82. BARTHOLIN'S CYST	1.7	146	248.2	20	8.13	162.6		411	(110)	301	334	357	102	20	8.13	162.6	(15)	250	250	249		
BALANCE AVERAGE PRICE										308	348							233	233			

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OUT PATIENTS					
Out Patient Procedures	298	x	3	=	894
" " First	978	x	2	=	1,952
" " Follow-up	3,382	x	1	=	3,382
					6,228
Quantum	£101,840+63,506+10,833 / 6,228			=	£28.26

					PRICE	1993/4 PRICE
Procedure	£28.26	x	3	=	£85	£81
First	"	x	2	=	£57	£41
Follow-up	"	X	1	=	£29	£20

Examples of cost shifting

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A hypothetical example:

Sophisticated pricing and its consequences

Suppose that there are two hospitals, P and Q, which are essentially identical in the services which they offer, their costs and the prices which they charge to commissioning authorities. They each offer some routine surgical procedure for which they charge £600 to class 1 patients (above pension age) and £400 to class 2 patients (below pension age). This differential reflects longer average recovery times and higher incidence of complications among the elderly. The prices charged do actually reflect the true average costs of providing the service and since there is nothing to choose between the hospitals in price or quality, patients and their GPs will choose between them on the basis of locality and access. The situation is in equilibrium.

Suppose now that hospital P employs some bright young management accountants, with computers, to refine their pricing structure. They find that for each class of patients there is a range of actual costs and that it is possible to predict on the basis of exact age, general fitness, past medical history and various other factors at which end a particular individual is likely to fall. On this basis they sub-divide the existing classes into four new sub-classes, 1a, 1b, 2a and 2b for which the average treatment costs are £650, £550, £450 and £350 respectively. This is a purely statistical technique which does not assist in the treatment process at all. In each group there will be individuals who will need a level of treatment more typical of another group, and the need for clinical judgement in individual cases will be unaffected.

In setting its new price schedules hospital P will have to allow for the costs of employing its accountants, and the necessary information technology, and of collecting additional information which is needed for pricing but not treatment purposes. The actual price for the four classes may therefore be £655, £555, £455 and £355. Hospital Q meanwhile continues with the previous pricing policy. One may then ask which hospital is more efficient and which will succeed in their mutual competition.

With regard to the former question, hospital Q can offer identical treatment to an identical population of patients at a lower total cost than hospital P. Hospital P can offer in return a structure which relates price more closely to cost for individual cases, which could be seen in some contexts as desirable in itself on grounds of equity. In a system based on treatment being given free to the actual consumer however, this is irrelevant. It is clear therefore that hospital Q is the more efficient.

It is equally clear, however, that it is hospital P that will succeed in competition. This will happen because patients in classes 1a and 2a will gravitate towards hospital Q while those in 1b and 2b will gravitate towards hospital P. Hospital P will flourish in this situation, in general because its falling average prices will make it look efficient but more particularly because by setting its actual charges for classes 1b and 2b at somewhere in the ranges £556-£599 and £356-£399 respectively it will be able to generate profits which will enable it to improve aspects of its service. Hospital Q however will be in considerable trouble since it will be charging £600 and £400 for treatments the average costs of which will approximate more and more closely to £650 and £450.

Eventually therefore, hospital Q will have to set up its own information system and revise its pricing structure in line with hospital P's. The system will then return to equilibrium, but at a lower level. The same numbers of patients will receive the same treatment in the same places as before the process started, but at a higher total cost. Alternatively, in a cash-limited system, the number of patients treated in total will fall. The new equilibrium will last until someone employs some even brighter management accountants, with more expensive computers, to discover classes 1a(i), 1a(ii), 2a(i) and so on, whereupon the process will repeat itself. It should be noted that all this will occur without any change in the treatment offered to any actual patient, apart perhaps from a transitional deterioration in access and transport caused by the disturbance of catchment areas.

The costs of treatments offered to actual patients will be equally unaffected by this process.

Extract from: O'Kelly, R. (1990).
Competition and Financial Information in the Health Service, Health Services Management, 86(3) June 1990.